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ABSTRACT

This monograph looks into the origins of competency programs in higher education and explores various ideas about educational outcomes as a basis for defining what competency is and is not. These educational outcome ideas relate to behavioral objectives, mastery learning, and testing for specific competencies rather than for an intelligence test type of learning. Eight competency programs at institutions of higher education are surveyed with emphasis on how they began and the unique set of competencies they developed. Since these outcomes are not only informational in nature but often include value outcomes as well, the institutional goals must be clearly defined before competency outcomes for students can be specified. (Author)

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1975

Competency Programs in Higher Education

David A. Trivett

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Competency Programs in Higher Education

David A. Trivett

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Foreword

This monograph looks into the origins of competency programs in higher education and explores various ideas about educational outcomes as a basis for defining what competency is and is not. These educational outcome ideas relate to behavioral objectives, mastery learning, and testing for specific competencies rather than for an intelligence test type of learning. Eight competency programs at institutions of higher education are surveyed with emphasis on how they began and the unique set of competencies they developed. The author suggests that institutional goals must be clearly defined before competency outcomes for students can be specified, since these outcomes are not only informational in nature but often include value outcomes as well. The author, David A. Trivett, is a research associate at the ERIC Clearinghouse on Higher Education.

Peter P. Muirhead, Director
ERIC/Higher Education

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Overview

This report surveys competency programs in higher education, where a model of what constitutes an educated person is used to prepare a set of competencies students must satisfy prior to graduation. Where, how, or when the student achieves the competence is ideally of no consequence. All manner of life experiences can contribute. Because of the drastic nature of change required, pressure may be felt throughout an entire institution that decides to begin a competency program. Many existing program components, such as learning support structures, must be modified.

Competency programs place emphasis on behavioral objectives, mastery learning, and testing for competence rather than narrowly defined ideas of academic achievement based on intelligence-type tests. The search for a competency curriculum is not new to higher education. Many attempts have been made to identfy what should be taught during the short time a student is in college and many attempts have been made to tie the classroom learning of students to the world outside the classroom. Recently, competency- or achievement-based degrees have been proposed as a way to shorten the time requirement for undergraduate study. In addition, the grants of the Fund for the Improvement of Postsecondary Education, which are intended to encourage exemplary new ideas about postsecondary education, have supported several new competency programs.

If a college or university decides to implement a competency program, it usually employs a series of discrete, interrelated steps. These steps will vary by type of institution, but near the outset competency statements must be written that reflect clearly stated institutional goals. Then, new assessment strategies must be developed and curricular experiences arranged to lead to the achievement of competencies based on these institutional goals. New roles and tasks for faculty and students also will result from such a program.

The paucity of research literature linking competency programs to their theoretical antecedents proscribes the best description of them. For this reason the clearest perception of the dynamic nature of these programs is afforded by a descriptive survey. Background circumstances, competency statements, and special implementation procedures demonstrate the use of basic concepts and the realities of practice. Eight programs are briefly described in this monograph.

These programs are generally at liberal arts colleges or are non-traditional or special degree programs designed to promote the development of general competencies. Professional programs, particularly those in competency-based teacher education, are *not* discussed.

The lack of research on competency programs makes their evaluation difficult. There are many questions that need to be answered. For example, how does one measure qualities usually regarded as non-measurable? Does the use of the term "competence," signifying a mixture of measurable and less measurable affective attitudes, beg too many academic questions? Can competency programs offer cost-effective instruction as well as academically bona fide graduates to society? Only systematic evaluation over time will provide answers to these questions.

Basic Concepts and Definitions

Competency programs in higher education combine rationales, approaches, and strategies in a common notion: *a degree or certificate from a collegiate institution should mean that the recipient has achieved certain competencies.* Beyond that point, there is wide variance in rationale and policy. Few of the reports published about these programs in higher education include bibliographic citations. Many of the program descriptions contain no references to a conceptual basis that was employed when the programs were designed. In many cases it appears that a strong group of leaders in an institution simply worked out a few concepts, frequently with the aid of consultants, and guided an institution into an educational format that satisfied local needs. The consequence of this diversity and lack of reliable identification of sources is that the underlying concepts must be gleaned from between the lines. This chapter focuses on basic ideas that can be generalized from the practice of several competency programs. Not all spokesmen for competency programs would accept these ideas as inclusive and many would, in fact, reject some of them. However, the concepts discussed do represent a set of common beliefs that suggest what competency programs are striving for.

Behavioral Objectives

The concept of behavioral objectives provides the basis for one element in competency programs, although it is often rejected by those who think of competencies as broad groups of skills, knowledges, or attitudes. One conventional explanation of the concept of behavioral objectives is given by Mager (1962), whose watchword is "before you prepare instruction, before you choose material, machines or methods, it is important to be able to state clearly what your goals are" (p. viii). According to Mager, if instruction is to succeed, the outcomes of the course or program must be specified; procedures, content, and methods relevant to objectives must be selected; students must be caused to interact with the appropriate subject matter in a manner consistent with principles of learning; and the student's performance must be measured or evaluated in comparison with the stated outcomes or goals (p. 1).

In Mager's terms, an instructional objective is an "intent communicated by a statement describing a proposed change in a learner"

(p. 3). Without a clear statement of intent, it is impossible to evaluate a course or program efficiently or to select appropriate materials, content, and method. Tests, for example, are not useful in evaluation of programs unless instructional goals have been specified in advance. If the goals are clear, the student and instructor can use the test to evaluate the student's progress. The student can concentrate on learning content rather than on mastering the instructor's idiosyncrasies (p. 4).

A good instructional objective communicates what the learner will be doing when he has learned. Mager describes a method for writing objectives that incorporates the behavior of the learner: (1) identify the terminal behavior by name and specify the kind of behavior that will be acceptable as evidence of learning; (2) describe the important conditions under which the expected behavior should occur; and (3) specify criteria for acceptable performance, describing what constitutes acceptable performance. Other competent persons must be able to understand the criteria and make judgments as to whether or not the learner meets the criteria (pp. 10-12). Thus, in Mager's view the objective should specify what a learner must be able to *do* when he has learned (p. 13). The objectives for an entire program are simply compilations of these specific statements of outcomes.

Some of the concepts espoused by Mager would be accepted by most spokesmen and organizers of competency programs. These would include the idea that, at least on a course or module level, the objectives sought in the instructional package should be specified in advance and the learner should be aware of the criteria that will be used to measure his performance. However, adherents of competency-based programs argue that some instructional goals are intangible and cannot be measured. They reject Mager's view that if one is teaching that which cannot be evaluated one is in the position of not being able to demonstrate that he is teaching at all. In other words, the idea that *instructional outcomes that are not measurable do not occur* is refuted.

Meeth has commented on the difference between competencies as used in competency programs and behavioral objectives. In his view, "behavioral objectives tend to be reductionist, to break learning into smaller and smaller units, whereas competency tends to be more global or gestalt by nature. In design, the broader the skill or the knowledge base, the more appropriate are competencies" (Meeth 1974 [p.2]). In addition, as is clear from the presentation of Mager's ideas above, behavioral objectives include only overt behavior. How-

ever, in Meeth's conception, competence includes covert behavior that is open to broader evaluation than the narrow specifications of behavioral objectives. Furthermore, in Meeth's judgment, behavioral objectives are written in a way to stress what the instructor will do to lead the student to competence; competencies stress what the learner will do to learn.

In practice, the use of competencies is frequently contrasted to the use of behavioral objectives. Brownlee argues that the varied methods used in assessing competency at Sterling College, for example, permit the college

> to include those characteristics that such colleges have always sought in their graduates—the intangible but nevertheless essential ingredients of the broadly educated, value-oriented person. One can thus avoid the problem faced by those whose insistence upon precise measurement of behavioral objectives prevents them from including in their lists of competencies any outcomes that cannot be evaluated in this manner (Brownlee 1974a, pp. 4-5).

At Sterling College competencies are articulated to include values such as "comprehension of the Christian heritage."

Mastery Learning

Another concept that pervades the thinking and discussion of competency programs is mastery learning. One proponent of this concept, Benjamin Bloom (1968), suggests that

> most students (perhaps over 90 percent) can master what we have to teach them, and it is the task of instruction to find the means which will enable our students to master the subject under consideration. Our basic task is to determine what we mean by mastery of the subject and to search for the methods and materials which will enable the largest proportion of our students to attain mastery [p. 1].

In Bloom's view most teachers hold the expectation that a certain portion of their students will not learn what they have to teach, which he believes is a wasteful and inefficient notion that also is not good for the ego of students. Bloom also asserts that learning will be a lifetime need for most people; therefore, the real task of schooling is to encourage students to be learners for the duration of their lives. School practices that are designed primarily to identify failures will not lead to that objective.

Use of the normal curve in grading is identified by Bloom as one of the manifestations of the negative approach. The normal curve describes the distribution that should be expected from random activity and chance. According to Bloom educational experiences should be

purposeful: "If we are effective in our instruction, the distribution of achievement should be very different from the normal curve" [pp. 2-3].

Bloom also argues for a different conception of aptitude. The traditional notion is that only a few individuals have the aptitude to learn the complex aspects of a subject. He contrasts this notion with the idea that perhaps aptitude simply reflects a difference in time required to learn, that perhaps 5 percent of learners will learn a task with unusual fluency, another 5 percent only with great difficulty.

> In between are approximately 90 percent of the individuals where . . . aptitudes are predictive of rate of learning rather than the level (or complexity) of learning that is possible. Thus we are expressing the view that given sufficient time (and appropriate types of help), 95 percent of students (the top 5 percent plus the next 90 percent) can learn a subject up to a high level of mastery (p. 4).

Rather than proceeding on the assumption that there is one best method of instruction for all students, Bloom suggests that various types of instruction might be useful for different students to achieve the same objective. The ease with which a student learns material may reflect simply his understanding of the nature of the task he is to learn and the procedures he is to follow in learning it; for this reason, greater variety in instruction may be the pathway to mastery of material by most students. Since, by the above definition of aptitude, perseverance influences what a person learns, frequency of reward and evidence of success also will encourage students to persevere in learning to mastery. Another ramification is that the arbitrary time limits imposed on learning by schools and colleges would have to be modified.

It should be noted that the concept of mastery learning also requires clear specification of what students will know or be able to do when they have achieved mastery. Therefore, clear objectives and evaluation procedures must be specified in advance. Implicit in this is the possibility of a separation between the teaching-learning process and the evaluation of learning (p. 8). Evaluation that is part of the instructional process serves a different purpose than evaluation at the conclusion. The evaluation-in-process (formative evaluation) serves to provide feedback to teachers and students as to the effectiveness of instruction. Evaluations that occur along the way help to motivate and regulate the pace of learning by the student in addition to providing information on the efficacy of instruction (p. 9).

Competency Instead of Intelligence

Another set of ideas cited frequently in the few bibliographies on competency programs are those reflected in an address by David McClelland entitled "Testing for Competence Rather Than for 'Intelligence'" (McClelland 1973). McClelland's philosophical statement about testing is adopted as a rationale for some competency programs, particularly those programs that acknowledge an egalitarian objective of accommodating a broader range of student aptitudes than has been traditional for most institutions.

McClelland argues that the universal use of intelligence and aptitude tests can only be justfied if they are valid, and suggests that there is less evidence than generally thought for the validity of such tests. For example, although scholastic aptitude tests do predict grades in school, what do grades predict? "Researchers have in fact had great difficulty demonstrating that grades in school are related to any other behaviors of importance other than doing well on aptitude tests" (McClelland 1973, p. 2).

The lack of correlation between grades and success in life means that traditional testing may be perpetuating a myth by identifying qualities that are not related to anything other than good game-playing on tests. This should not be called intelligence, nor should it be used to keep people from getting into schools; rather, those who score low should present a challenge to the schools to show that they can do something. McClelland thinks the correlation between job success and intelligence tests may tell more about the contacts and backgrounds of those who score well than about the relationship of scores to later success. He proposes several steps that in his view would establish a greater connection between testing and success in life. For one, he suggests the best testing is criterion sampling or asking subjects to accomplish tasks similar to those that are actually required in performance. This is why some academic skill tests do predict grades—they require performance on skills similar to those required in the classroom (but not necessarily those required in life) (p. 7). The concept of criterion sampling requires test makers to analyze what behaviors are required for performance. McClelland also thinks that tests should be designed and used so they reflect what a person has learned rather than some "pure ability factors" (p. 8). Another suggestion is that the means to improve a score should be made public, since faking is less likely when there is a good connection between the test behavior and the criterion behavior (p. 9). Tests should assess competencies involved in life outcomes.

> Many jobs and most interpersonal situations require a person to be able to communicate accurately by word, look, or gesture just what he intends or what he wants done. Writing is one simple way to test these skills. Can the person put together words in a way that makes immediate good sense to the reader (p. 10)?

Other qualities might be nonverbal, such as perceiving what is going on in a social situation, having patience, or setting moderate goals. Hence tests should require more spontaneous responses from their subjects than are customary. As he puts it, "life outside of a test seldom presents the individual with such clearly defined alternatives as 'Which dog is most likely to bite?' " (p. 11). McClelland urges testers to discard the innate intelligence philosophy and view testing more as a profile of what students have learned and need to learn both in scholastic and nonscholastic areas. Then schools can see what they are accomplishing by retesting to provide feedback and information about whether students are actually learning (p. 13).

The relationship between the concepts of behavioral objectives, mastery learning, and testing for competence to competency programs in higher education may not be immediately apparent. However, a review of competency programs shows that several adaptations have been based on these concepts (extrapolated by the author):

1. From *behavioral objectives,* the idea that instructional goals should be specified clearly prior to instruction;
2. That appropriate learning experiences can be chosen after the instructional objectives have been specified;
3. That outcomes of student learning should be verifiable by other competent persons than those proposing the objectives;
4. That to varying degrees, outcomes of student learning can be specified in behavioral terms; i.e., should be demonstrated by what students can *do.*
5. From *mastery learning,* the idea that students should be expected to learn and can master materials at a high level of accomplishment if the instruction provided them is efficient;
6. That a variety of instructional approaches will enable students with varied learning styles to learn material;
7. That incremental levels of accomplishment will be most conducive to long-term learning and perseverance by students;
8. That evaluation of what has been learned can be separated from the learning process itself;
9. That evaluation within the learning process can enable students and instructors to know whether the instruction and learning is being successful;

10. That assessment and grading of students that assumes that achievement is distributed randomly denies the purposeful intent of instruction.

11. From McClelland's notion of *testing for competence*, the idea that scholastic aptitude as measured by traditional intelligence tests may reflect predictable achievement in school as measured by grades, but that grades do not predict performance in life;

12. That more reasonable testing in the academic world would focus on "criterion sampling," so that behaviors required in tests are samples of actual behaviors required for success in life;

13. That more competencies actually required in life should be ascertained and tested for;

14. That the skills and behaviors required for successful performance on tests should be publicly known in advance to those who will take the tests;

15. That tests should be used more to enable students and teachers to have knowledge of what students need to learn, and then, after instruction, to evaluate what they have learned.

Definitions of Competence

There is another set of basic concepts and terms that arise out of the competency movement itself. Many of these are working concepts that are defined by the context in which they are used. One definition of competence has been provided by the Fund for the Improvement of Postsecondary Education (no date (b)):

> Competence is the state or quality of being capable of adequate performance. Individuals are described as competent if they can meet or surpass the prevailing standard of adequacy for a particular activity. While competence does not equate with excellence, it does imply a level of proficiency that has been judged to be sufficient for the purpose of the activity in question. Recently the concept of competence or competency has entered the language structure of postsecondary education on the basis of clearly defined objectives (p. 7).

Meeth has also provided a frequently used definition of competence as "the minimum knowledge skills, values and/or attitudes a person can be certified to possess based on a set of criteria or level of expectation" (Meeth 1974, p. 2).

In addition to the idea that competence means "being capable according to some set of standards," there is usually some attempt to insure that those who are judged competent by an educational institution can make a smooth transition from school to the world outside the school. Edgerton, in speaking of the essential conditions of

competency, asserts that learning outcomes must embrace more than knowledge if they are to produce competence: "The ingredients of competence that we need to think about are knowledge, plus skills, plus attitudes—not just knowledge" (Edgerton, Russell B. in O'Connell and Moomaw 1975, p. 7).

Competency implies a continuum between acquisition and demonstration of skills at a desirable level, but it also means something much broader. Edgerton suggests that the easiest approach to competence is to view it as the acquisition of socially desired skills. With that meaning, competency may be broken into large groups of skills, such as analytical skills, problem-solving skills, communication skills, social interaction skills, and others, which when further broken down appear to be taught in almost every course, regardless of subject orientation. In that context, competence could be achieved more efficiently for college students if introductory courses concentrated on developing competences without duplication of effort through many different subject areas (Edgerton, Russell B. in O'Connell and Moomaw 1975, pp. 8-9). It also may include the idea contained in the assertion that "competency statements specify behaviors which are to be attained by the learner" (Haynes 1975, p. 13), as well as the notion that competency is useful in a liberal arts context because it permits value judgments (Brownee 1974a, p. 2).

The meaning of competence, as has been shown, must be derived from an examination of the types of competences a program requires. But, generally, competence is present when an individual can demonstrate skills and knowledge—or skills, knowledge, values, and attitudes—that are specified in some manner. This is in contrast to certification that the student has attended or completed a course of study, meaning only that *exposure* to words about skills, knowledge, attitudes, or values has taken place. Once an institution has specified what it thinks it means to be competent or to have competence, statements can be written that specify what a certified program graduate has accomplished.

The Competency Curriculum

In addition to understanding the concept of competence, it is necessary to know what is usually implied by the competency curriculum. According to O'Connell and Moomaw (1975), "competency" is a term used to represent an educational movement or a learning strategy that emphasizes outcomes of learning rather than the experience of learning. The emphasis is on attainment instead of exposure time (p. 1).

Use of a competency program requires an entirely different perspective and prompts basic questions about the purpose of an institution, since the first step must be one of establishing goals and objectives that differ significantly from past formats. With a competency curriculum there are three components: (1) an explicit statement of desired competencies; (2) specification of procedures for assessing the achievement by students of the competencies; and (3) design of learning experiences that lead to the attainment of competencies by students.

However, before these three components can be implemented, institutional goals and objectives must be clearly, explicitly, and publicly stated. This usually requires an image of the type of student the institution believes will be the product of the program. For a liberal arts program this requires a projection of the competencies desired. For professional programs a similar knowledge of the outcome behaviors expected of the professional is needed. An explicit statement of competencies to be attained by the students must then be articulated from this projection. In theory, statements of behaviors, skills, and qualities at the lowest level can be combined to form the institutional or program statement. The next step is to design an assessment procedure to determine if the desired competences have been achieved by the institution. Assessment in competency programs is intended to be public verification of achievement by the students whose performance is compared to a given set of standards. The final step is to design learning experiences that facilitate the achievement of competencies by the students. The critical test is whether experiences prompt the learner to learn. What is being "covered" in a class is important only if it promotes the desired learning (pp. 1-3).

The result of these steps in developing a competency curriculum is that outcomes are specified and competences stated that will be acquired by students upon successful completion. Next, evaluative criteria are provided for each competence, specifying the proficiency required for successful attainment. Then sets of experiences are designed to assist the student to acquire these competencies (Knott 1975b, p. 28).

Origins of Competency Programs in Higher Education

There are twenty or more competency programs in higher education in operation today. How did they originate? At an institutional level many programs began because of trusee action or because of administrative reaction to a legislative call for cost-effective instruction. Also, in its search for survival methods, a small college may decide to develop such a program. But in a broader context, the origins of the present competency programs stem from response to past educational concerns. For example, competency programs have recently been proposed as a solution to questions about the meaning of the undergraduate degree as well as how long it should take to achieve that degree. Also, the role of funding agencies, such as the Fund for the Improvement of Postsecondary Education, in promoting the development of innovative programs cannot be overlooked.

Historical Precedence

The precedents for the current efforts toward competency programs in higher education have been identified and discussed by Tyler (1975). In his view, competency curricula respond to two longstanding problems. The first is how to select what ought to be taught in college. Since only a limited time can be provided for instruction, colleges have to concentrate on the most important learning tasks. This is especially difficult today due to the rapid change in required knowledge and skills. The second problem is how theory and practice should be related in the collegiate setting. In Tyler's view, attempts to find solutions to these problems have resulted in a "number of serious efforts . . . by colleges to select what is to be taught in terms of its contribution to the student's competency in carrying on his life effectively and in dealing with the problems he encounters and to provide means for helping the student to utilize what is learned in this way" (Tyler 1975, pp. 55-56). Tyler sees the use of "practicals" in land-grant colleges in the 19th century and the development of cooperative education in engineering education in our own time as examples of collegiate attempts to teach the important skills and relate practice and theory.

If the problem of matching learning to performance outcome has been so vexing, why have efforts to meet this issue been so tardy?

Tyler speculates that the answer many center on three conditions. One is that faculty are interested in their own discipline without regard to its meaning to the nonspecialist student. Second, because colleges and universities have been charged with responsibility for sorting people by intellectual ability, highly abstract courses, which lack direct application to useful skills, have long been accepted. Third, most attempts at competency programs have been either too vague and general or far too specific and mechanical (p. 62).

Tyler suggests several conditions that should be met if current efforts of competency programs are to survive. He recommends that developers of programs recognize that formal education plays only a small part in the lifetime of most persons. Also, program developers should attempt to determine what students need and what subject matter can contribute to those needs, and bring these two elements together. A further suggestion is that objectives should be expressed at a level of generalization that students and faculty can be expected to understand. Finally, the appraisal of students' learning must focus on the learning objectives that have been selected (Tyler 1975, pp. 63-64).

Competencies and What a College Degree Means

Attempts have been made over the years to tie college degrees and certification to the demonstration of competence. A set of current rationales for competency programs can be gleaned from a series of discussions regarding the nature of the bachelor's degree. Giardina (1974) specifically relates improvements in the conception of the baccalaureate to achievement-based education. Although he is concerned nominally with the degree itself, ideas from his proposal for an achievement-based degree reflect the rationale behind most competency-based degrees. In his judgment the assertions of those who propose three-year degrees require discussion of prior questions about what is the purpose of undergraduate education.

He answers with a series of propositions about the B.A. degree and achievement education that would be accepted by many of the designers of competency programs.

1. "The baccalaureate degree should be achievement-based." He argues that students should be evaluated against a scale of competencies rather than against the achievement of their fellow students. Areas of achievement should be carefully articulated along with specified criteria. Achievement areas would not be exclusively academic and would acknowledge the mutual relationship of cognitive and affective behaviors (p. 113).

2. "Baccalaureate degree programs should make use of the competencies gained in high school" (p. 114). Giardina notes that usually it is assumed either that freshmen have learned nothing or that they all have learned to the same level of a given course. However, in an achievement-based program different levels of initial competence would be assumed and tests given to determine where students should begin. Thus, an achievement-based degree would be more personalized, with students working at their own level and pace. Such a degree program

> demands that a student be permitted to negotiate his educational aspirations with those people able to give him the best program and consultation the university has to offer, and able to monitor his progress and his success in completing his program while continually suggesting alternate routes and signaling possible roadblocks and dead ends (p. 114).

It is assumed that the student begins with a level of achievement that can be objectively measured, and progress made toward minimum levels of achievement that represent the mutual goals of the institution and the student.

3. "Baccalaureate degree programs should relate to societal needs" (p. 115). Giardina proposes that society has a right to expect that a student with a degree will be able to make a contribution to society. For this reason, the institution granting the degree should determine what competencies the student will need in his society.

4. "Baccalaureate degree programs should instill an ability to relate to all types of life situations and to live realistically in a world engaged in perpetual change" (p. 116). Students will be better served if they learn how to find and evaluate the content they need, rather than being filled with information someone else regards as valuable.

5. "Baccalaureate degree programs should encourage specialization and mastery of certain types of expertise, while realizing that, as a result of perpetual transformation and of the increasing obsolescence of knowledge and skills, the educated man of the future will have to undergo a continual process of 'retooling'" (p. 117).

6. "Baccalaureate degree programs should recognize the potential inadequacy of traditional departmental majors, in that the interdisciplinary nature of knowledge is becoming increasingly recognized and stressed as being of greater relevance to the needs of today's student who is interested in the relationship of societal man, technology, values, and the future" (p. 117).

7. "The traditional distinctions between general and specialized education should be reexamined, in that specialized study is increas-

ingly seen as meaningful only in a broader context" (p. 118). Here Giardina proposes that achievement-oriented baccalaureate programs can define the achievements and competencies that are essential to the development of an educated person. Competencies acquired at an early stage of study will be the foundation for additional broader competencies that comprise the degree and represent an educated person. Then, measurement will permit the assessment of the student's progress toward the attainment of the degree.

8. "General education should be not only the foundation but also the capstone of the baccalaureate degree" (p. 119). Specialized education is only a subset of general education. Within an achievement-based degree context, the student can increase in general skills as he increases his special knowledge.

Giardina concludes by rejecting any attempt to shorten the baccalaureate degree without asking what it should mean. "It is only by reassessing what we are trying to accomplish, by determining the types of competencies which we would like to see our students attain through an appropriate application of their affective orientations, values, and motivations, and by creating a baccalaureate degree program which will help us to bring about these competencies, that we can reduce the time spent in undergraduate education without sacrificing educational quality" (p. 120).

Another discussion of the baccalaureate (Harris 1972) promotes the value of a competency approach in righting problems inherent to the undergraduate degree. Harris suggests that many of the problems of American higher education result from an overreliance on the "exposure" approach to collegiate education. A solution lies in stressing evaluation as distinct from instruction. Although degrees *are* generally standardized by prescribed exposure to subject matter, students who complete the exposure process are not graded against explicit criteria. Students are graded against the curve or normal distribution, particularly in lower-division courses. As a consequence, colleges have relatively little control over the level of achievement being certified. Harris also argues that the exposure approach results in rigid prescription of courses and makes it difficult for instructional effectiveness to be assessed. Little feedback occurs to regulate the instructional system. As a solution, he proposes that institutions award credit on the basis of demonstrated and consensually evaluated attainment (pp. 59-60). If this change were made, then "the baccalaureate would come to represent the culmination of demonstrated, documented, and hence validated attainments judged against explicit criteria. The pri-

mary requirement for these criteria would be susceptibility to consensual observation by competent observers" (p. 61).

Harris argues that college and university faculties have been permitted to maintain classroom instruction as an end in itself. Although quick reform is unlikely, external pressures may accelerate it. For example, since external degree students are judged on the basis of what they have learned, a clamor may arise to apply this criterion to all students. Open-admissions programs will force institutions either to drop their standards, increase the number of failures, or switch to criterion-degree standards. In these cases Harris sees an underlying problem of public accountability. "Higher education cannot have it both ways; one cannot insist that collegiate education is a private, individual matter and then justify societal support for it as manpower development and allow its benefactors to use the degree as credentials" (p. 64). Harris believes the solution lies in a change to an attainment-(competency)-based degree program. Although objections are voiced that this is impossible given the state of knowledge about competencies and measurement, if colleges and universities committed themselves to degrees based on attainment (without regard to exposure), faculty members would learn how to perform new roles, competencies would be defined, and new examining methods would be developed (p. 65).

While the positions taken by Harris and Giardina are nominally responses to challenges about the meaning of the undergraduate degree or to arguments that it should be reduced to a three-year duration, their replies defend the concepts that are common to competency programs. The social value of a college degree should arise from certification of a graduate's achievement by the institution. This cannot be done as long as colleges only *assume* competence from students whose exposure to a series of experiences begins with wide differences in knowledge and skills. Nor can competence be certified when the evaluation of student achievement represents the comparison of one student with another rather than against some predetermined criteria.

Role of the Fund for the Improvement of Postsecondary Education

The development of competency programs has gained impetus through the activities of the Fund for the Improvement of Postsecondary Education (FIPSE). Many of the grants for competency programs in higher education are from FIPSE; many of the concepts and definitions used in programs have been suggested by the Fund; and many of the organizers of competency programs have identified Fund

support as the element that permitted them to put a competency program in effect. For this reason, work of the Fund must be identified among the origins of the present interest in competency programs.

The basic purpose of the Fund is to help extend educational opportunities in postsecondary education and to improve the effectiveness and quality of that education. The two general goals are to be pursued through encouraging structural, learner-centered improvements in postsecondary education (Fund for the Improvement of Postsecondary Education, no date (b), p. 2). Encouragement means making grants that are action oriented rather than research directed. Funds can be granted for various categories of purposes such as "comprehensive," "special-focus," and "national." The special focus competition for FY 1975 was "education and certification for competence." Within this competition hundreds of proposals were received and evaluated.

The reasons for interest in competency programs given by the Fund shed light on some of the larger values of competency programs. According to the Fund statement, competency approaches may offer some solution to the problem of a lack of congruence between educational objectives and the needs of society and of the individual, particulary the evidence that some college graduates are ill-prepared for the changing labor market. Competency approaches may represent a more equitable way to credential. Credentials can be acquired for knowledge rather than for exposure: consequently it is feasible to believe that more individuals who have acquired their knowledge in nontraditional ways might receive credentials at reduced cost in time and resources. There is also the problem of educational standards and the significance of the credentials. It may be in society's interest if educational institutions have explicit standards justly applied. Students, society, and the institutions will know when standards have been met and what the credential means. Another possibility is that competency programs may lead to better teaching. The reasoning here is that "the presence of more explicit objectives and more precise criteria for the award of credentials may persuade educators to take greater responsibility for the attainments of their clients by examining the efficacy of the curriculum and the pedagogy that they offer" (p. 9). This objective is particularly important in view of the more diverse student bodies in postsecondary education. Finally, the Fund would like to see efforts that clarify and define competencies that are more encompassing than narrow vocational ones. These

broad competencies would include problem-solving abilities, analytical skills, leadership capability, and social interaction skills (pp. 9-10).

Examples of Competency Programs—Funded by FIPSE

Several examples of competency programs that have received assistance through FIPSE funding are described in a later chapter. In addition to these, other projects include the following examples.

Antioch School of Law, Washington, D.C.:

> An urban institution serving a large number of students from minority backgrounds is developing a competency-based law program in order to relate the classroom and clinical approaches of its current program more effectively. The Fund's grant supports the refinement and validation of competencies and the translation of these competencies into the law curriculum (Fund for the Improvement of Postsecondary Education, no date (a), p. 17).

Case Western Reserve University, Cleveland, Ohio:

> The Ph.D. program in organizational behavior within the School of Management, Case Western Reserve, is being revised to develop student competence in the areas of organizational change, policy research, group interaction processes, and values and professional ethics. The project supports the definition of standards of competency, methods of assessment of student learning, and development of performance-oriented strategies in each of these areas (p. 19).

Two institutions, Sangamon State University and Illinois Central College, in Springfield, Illinois:

> A state university and a community college are jointly developing a bachelor's program in history based on the liberal arts "competencies" appropriate to a variety of professions. The competencies are conceived hierarchially from elementary skills in communications, to analytical skills, to a sence of self in time and place. Students move from Illinois Central to Sangamon as they achieve certain competencies. Rather than helping to prepare scholars in history, the project has the goal of producing individuals who can better define their place and create effective roles in society (p. 25).

Summary

Although no systematic inquiry into the origins of the present group of competency programs is yet available in the literature, three possible origins have been explored in this chapter. First, searches for competency curricula have been done in numerous ways over the past century. Second, contemporary deliberation on the meaning of the

college degree has lead several individuals to propose the attainment- or achievement-based degree as a solution. Third, an element in the current growth of competency programs is certainly the Fund for the Improvement of Postsecondary Education. In addition, the motivation and mission of the Fund shed some light on the social circumstances and values behind competency programs.

Institutional Implementation

Individual staff members of a college or university may support some of the ideas and concepts inherent in competency programs such as mastery learning, specification of objectives, etc. However, when a college as a whole (or large subunit of a university) decides to implement a competency program or curricula that leads to a degree, there must be a readiness for a complete rethinking of institutional practice. As Edgerton puts it, "there has to be a commitment to follow out the logic of the objectives adopted in the name of competency throughout the institution" (Edgerton quoted in O'Connell and Moomaw 1975, p. 9). Before a competency program can be put into practice, questions must be asked about every aspect of an institution's operation. For example, what methods will be used to evaluate the competencies students have or need prior to admission. Given the breadth represented by the term "competence" as used in some institutions, methods may be needed to identify "motivation" and other nonacademic attributes. In terms of instruction, should faculty be spending more time in assessing, diagnosing, and counseling and less time imparting knowledge? How will graduation requirements be affected (pp. 9-10)? The institution that moves toward a competency program must ask questions about every mode of its operation in terms of whether or not it supports the change required by a competency program.

The decision to implement a competency program or curriculum can be broken down into a sequence of steps. First, the institutional purpose and goals must be clarified. Second, the basic elements of the competency curriculum itself must be designed; that is, explicit statements of the competencies required of students should be articulated, evaluation or assessment procedures decided upon and produced for each competency, and then learning experiences constructed to enable the student to move toward the competencies. Finally, all the institutional support structures are modified or reorganized to support a competency program (O'Connell and Moomaw 1975, pp. 19-20).

Competency Programs in Different Types of Institutions

Obviously, the implementation of a competency program in a small liberal arts college will differ from the process of implementing a

competency-based degree program in the school or department of a large university. Schlesinger (1975b) discusses this difference by treating the orchestration of competency programs as an example of a reform movement. He finds that most of the participants in these programs are aware of the immensity of the task. Nevertheless, he recommends that those engaged in competency programs remember the necessity for constant reassessment. The outcomes of a program (as measured in terms of student competencies) are the important product. All learning experiences, including the curriculum itself, are subject to criticism and replacement if they do not produce results (pp. 1-5).

Getting traditional faculty members to look at their disciplines and programs in this tentative manner may be difficult. "How do you get the committed disciplinarian to think of basic, life-long capabilities that transcend his or her discipline (p. 4)? Yet the assistance of faculty members is obviously essential. In Schlesinger's view, the success of programs based on a broad range of educational intents (as in competency education) may be easier in the small liberal arts college than in the university: ". . . to the extent a college has a tradition, a self-conscious image which somehow informs the behavior of its faculty, administration, and students; and so long as that tradition involves, at least in the abstract, a devotion to the developmental aspects of the whole person, such a college is greatly advantaged in constructing and implementing a CBE program. The rationale is already there" (p. 9).

However, the success of implementation in a small college may be accomplished at the sacrifice of the strength of diversity. Those faculty members who don't support the program either must compromise or leave. Schlesinger contrasts this with the environment at a large university where there is less compulsion on the part of dissenting faculty to support an educational program they don't believe in. However, the question arises, How much autonomy can a reform movement have? Frequently, reform efforts in a university must be justified while in competition with other elements of the university. Although a small college with a competency program may evaluate that program for self-interest or for a granting agency, in a university the innovation may have to be evaluated in terms that bear no relationship to its purpose. For example, the grades of students in competency programs may be compared with those of students in traditional programs. Naturally, costs relative to the reform effort are also evaluated comparatively in a university setting, whereas in a small college the overall cost of the program is looked at as the cost of operation.

In a university, administrators of reform efforts such as competency programs must also take steps to assure that students are not boxed-in by participating in the program. Program equivalencies and relationships with other programs in the institution must be established and made known. Schlesinger argues that communication efforts may be easier for reform programs within large units because only those who have an interest and commitment to the program need be subjects of communication about these programs. In contrast, at the small college those who are in favor of as well as those opposed or apathetic to the program must be kept informed about the operation (pp. 11-12).

At a small college, there may be a long-standing tradition of concern for developmental issues implied by a competency program. Existence of the reform program is not an issue; therefore it can be evaluated on its own terms. Within a large university a small but dedicated group of faculty may be identified who are supporters of the program; communication and development of the CBE program with that group may be less troublesome (p. 13).

Institutional Goals

The first step in the development of a competency program is the clarification of institutional purposes and goals. Questions must be answered such as, What are students expected to learn and what should they be able to do at completion of the program? What is the institution trying to achieve with its program? Ideally, agreement must be achieved from trustees, administration, faculty, students, and alumni on the purpose of the institution—a difficult step that requires careful strategies (O'Connell and Moomaw 1975, p. 21). Although this process may be the most important step in the beginning of a competency program, it also may raise uncomfortable questions about the reason for existence of the institution (p. 1). Nevertheless, there mus. be a "self-consciousness" about the institutional mission if competencies are going to be specified.

> Some agreement must be reached on the critical value issues concerning the desired character of the graduates and their potential impact on their communities, workplaces, and the larger society. Only then is it possible to identify the competencies required to realize these institutional goals. The problems encountered in moving from broad goals to specific competencies will depend upon the quality of the existing knowledge base and the nature of the goal. Some important institutional purposes may not translate easily into competency objecives (FIPSE no date (b), p. 12).

Developing Competency Statements

After an institution knows what it is trying to achieve in terms of the student and what its institutional purpose is, then these goals must be stated in terms of competencies the students are to acquire. These statements must carry out the intention of the institution and must be written in such a way that there is a connection between the competence that can be acquired from a specific learning experience and the competences that can be expected at completion of a program or a degree course. Thus, Hodgkinson (cited in O'Connell and Moomaw, p. 21) suggests that this is another distinction between behavioral objectives and a competency program. With competency programs there is the assumption that learning is an additive process leading toward the unified development of a competent person (p. 22).

Before an institution can define competencies, it needs to develop an awareness of the institutional mission, a definition of the roles students are being prepared for, and an awareness of the values students will espouse in performing their roles in society (FIPSE no date (b), pp. 12-13). Evidence should be gathered concerning the skills, knowledge, and personal qualities found in persons deemed successful. Analysis is needed of what types of competencies can best be acquired within an educational institution or from outside agencies. Ideally, competency objectives will represent a synthesis of the needs of mature adults who are effective persons and of the knowledge of what is desirable for them to be effective in economic and social roles. All of the affected parties might have a say in suggesting what these competency statements should include: learners, faculty, administration, employers, practicing professionals, and representatives of the public interests.

Meeth (1974) identifies seven "authority bases" that are currently in use in deciding what competencies will be. He lists these as "the individual himself," as when students are permitted to write their own competence statements; "the recipients of competence," as when patients and other clients of service are asked to specify what competences they desire from a professional; "practitioners"; "faculty" who are the most frequently employed specifiers of competence statements; "employers"; "experts"; and "government" in the form of legislative mandates and board requirements. Although any of the seven might also determine that the individual is competent, Meeth suggests that those who specifying competencies should not be those who evaluate the competencies (p. 2).

Articulation of competencies is not an easy task. Obviously, if competencies identified as objectives are not relevant or essential, the instruction provided to enable students to achieve them will be inconsequential and the assessment process also of little importance (Haynes 1975, p. 13). Determining the criteria for competency is also one of the most difficult processes in the competency program. In programs where preparation for a position is the objective, competencies might correspond to the entry-level requirements of the job, and these might be ascertained from research. However, with liberal arts competencies, the process is difficult, costly, and time-consuming. Regardless of the difficulty, the process must be done well and criteria must be sound (FIPSE no date (b), p. 15).

Assessment and Evaluation

After competencies have been specified, institutions implementing a competency program should develop assessment and evaluation procedures so that the achievement of those competencies by students can be determined. Although specification of the competencies is the basis for the examination of all components of a competency-based operation, procedures for assessing the competencies of individuals are also important, since they will provide the basis for certifying that the individual is competent (FIPSE no date (b), p. 14). In this way the assessment and evaluation procedure is the connecting link between the specification of competencies, which may reflect purely institutional objectives, and certification of the competence of a graduate, which is a public statement that a graduate has achieved whatever goals the institution has set for graduation.

Hodgkinson (cited in O'Connell and Moomaw 1975, p. 27) identifies seven areas where assessment is important in a competency program. These are assessment of:

1. Faculty skills—their ability in diagnosing student learning needs and attainments;
2. Student success in achieving college requirements;
3. The impact of the competency program on campus climate;
4. The impact of the competency program on admission;
5. The impact of the competency program on student attrition;
6. The impact of the competency program on faculty morale and aspiration; and
7. The impact of the competency program on the financial capabilities of an institution.

However, the most common role of assessment is in the determina-

tion of student progress. First, the student is assessed for diagnostic purposes to determine where he is beginning, what weaknesses are present, and what type of learning path should be followed to lead toward competence. Second, assessment of the student is used to measure the student's progress toward competence. At the completion of the program, assessment permits the overall evaluation of the student's achievement. This precedes certification that the student has met all predetermined levels of achievement in specific competences (O'Connell and Moomaw 1975, p. 28).

The essential element of assessment in competency programs is that the student is evaluated on the basis of what he can do rather than on his exposure to educational experiences (p. 30).

In this regard, assessment and certification in competency programs is radically different from the same process in most traditional higher education. In the traditional form, individuals are generally compared with their peers as to whether they have comprehended a body of subject matter over time. In competency programs the focus shifts from the process of learning to the results of learning. "Demonstrated competence can be assessed and recognized by credits and degrees independent of time spent, courses taken or forms of exposure to educational activity" (FIPSE no date (b), p. 14). There is also more interest in the ability to do than with the ability to know. Since the focus is on whether a student has attained a set of competencies, there is no need to be concerned about his performance with respect to fellow students (p. 15).

This distinction between assessment in the traditional classroom and assessment in a competency program should be emphasized. In a traditional classroom the criteria are a set of academic skills: "students are assessed on their ability to complete discipline oriented, academic exercises" (Heydinger 1975, p. 5), even though, particularly in liberal arts colleges, the stated goals of the institution are more those of *personal growth*, development of critical thinking skills, interpersonal awareness, and so on. Yet these institutions do not have the criteria to ascertain if their students have acquired the skills. This is contrasted with institutions that have competency statements of goals. "These competencies are criterion-referenced and behaviorally anchored. In other words, the standards against which the student will be assessed are predetermined (no grading on the curve) and these must be measurable in terms of behaviors" (p. 5).

In a competency program the focus is on what the student knows rather than on what he has been through. Consequently, the stu-

dent begins the assessment process immediately upon entry into an institution. The learning experiences he will pursue are designed to take him from where he is at entry to where he needs to be for competency. The student should also be credited with what he knows at point of entry if that contributes to the overall step-by-step development of competence as perceived by the institution (O'Connell and Moomaw 1975, pp. 30-31). The breakdown of competencies into smaller and smaller units permits the student to know what is to be assessed and what must be learned to achieve given levels of competence.

According to Hodgkinson (as cited in O'Connell and Moomaw 1975) there are two general types of assessment in competency programs: course-related and institutional. With course-related assessment, the evaluation is included as part of a class or other learning experience, and this procedure is supervised by the instructor or another qualified person. Generally, however, competency programs have moved away from the use of course-related assessment toward assessment of achievement of broad, institutional competences. In fact, Hodgkinson urges caution upon those who would use "proxy measures," such as satisfactory completion of a course, in place of assessment for achievement of a specific competency (p. 30).

A great range of techniques may be employed for assessment in competency programs. These include everything from paper-and-pencil tests to outside team observation, simulation games, and jury experiences. Or, institutions may wish to try a mix of assessment techniques (p. 32). Recent emphasis has been on new methods such as criterion-referenced testing, video-taping of performance, observation techniques, self-assessment procedures, and portfolios. The best measures of performance are those obtained in realistic settings. However, to create these settings so they are valid and reliable measuring devices is very expensive (FIPSE no date (b), p. 16).

Older methods of assessment may be insufficient to handle the demands of competency programs. In any event, faculty members will definitely have to be more concerned with assessment as a process. Generally, assessment in competency programs will be done by many more individuals than just the faculty. Community persons, professionals, businessmen, and alumnae may be involved in the assessment of competence at one of the levels. Regardless of the method employed, the task will be the measurement of actual outcomes of the learning process (Edgerton in O'Connell and Moomaw 1975, pp. 10-11).

Assessment and evaluation of student achievement may be done in an assessment center. If this is the case, staff members may be responsible for simple assessment of the achievement of students. Or the center may have responsibility for specifying competencies, coordinating evaluation efforts, and evaluating all the learning experiences provided by the college (*Competence-Based Learning at Alverno College* no date, pp. 9-10; Knott 1975, p. 52).

Because of the complexity of assessment in competency programs, there are more problems than in traditional classroom procedures. Meeth considers quality control to be one of the most serious. For instance, due to varying techniques employed by the juries who assess competence, it is difficult to assure within an institution that results will be consistent. Much faculty time is required not only from those who serve on evaluation teams but for developing the criteria and methodology to evaluate with criterion-based rather than with normative standards. Another assessment-related problem found in competency programs is that students are reluctant to face-up to the evaluation process. Meeth also reports that it is difficult for colleges to find persons trained in competency evaluation to assist them in their assessment design efforts (Meeth cited in O'Connell and Moomaw 1975, p. 33).

One value arising from the emphasis on assessment and evaluation is that the student's learning experiences are seen as part of a process or system. Consequently, feedback from the evaluation and assessment process may be used both to modify the selection and planning of experiences by the students and to change the nature of the learning experiences themselves.

Learning Experiences

After insitutional goals are settled upon, competencies derived, and assessment measures established, the institution can turn to the design of learning experiences that will lead the student to competency. The important point that must be considered at all times with respect to learning activities in a competency program "is the conscious recognition or evaluation of the knowledge, skill, value, or attitude that a student has gained from an experience or exposure to a body of knowledge rather than giving credit simply for the experience or the exposure". (Meeth in O'Connell and Moomaw 1975, p. 34). Thus, no credit can be given in a competency program for life experience *per se;* however, if the experience has contributed to the achievement of a competency, then that knowledge can be recognized.

In a competency program the goal for the student is learning related to the achievement of a competency. If nothing related to the competency is learned from an experience (course or internship or independent study), no credit is given. However, since what is learned is the important matter, a variety of learning experiences should be provided so that each student can proceed toward the achievement of competency in his own way, at his own level, at his own pace (O'Connell and Moomaw 1975, p. 34). A student sitting in a traditional classroom may appear to be learning and his performance on tests prove this. However, in a competency program the difference is that the student and the professor must be concerned with whether the student can independently demonstrate the achievement of competencies from that experience. No credit is granted for "exposure" to the experience. As faculty members and students understand this principle, new learning experiences that contribute to the achievement of competence by the student will be developed. These might include personalized systems of instruction, audio-tutorials, and independent study. As long as the point is preserved that student learning is more important than and independent of exposure to classroom experience, these techniques will be used. "Learning is the objective of a CBC [competency-based curriculum], and all aspects of institutional activity are evaluated on whether they facilitate achievement of that objective" (O'Connell and Moomaw 1975, p. 35).

New Role for the Faculty

The implementation of a competency program at a college or university requires a different concept of faculty role. This conception ranges from diagnostician to learning facilitator, counselor, mentor, assessor and evaluator and, generally last of all, to provider of knowledge. The result is considerable strain on faculty members who are involved in the development of competency programs, with demands on them for time as well as for new competencies.

The most dramatic change expected of faculty members involved in competency programs is "from being basically disseminators of information to facilitators of learning" (Meeth 1974, p. [3]). According to Meeth, "faculty in competency programs spend the majority of their time evaluating learning; second in priority and time is advising students; third is what they traditionally did—teaching courses [p. 3]. Naturally, this change in role is one of the most difficult tasks in moving an institution from a traditional approach to a competency approach.

Faculty conservatism has been identified also as a major constraint on attempts to move into competency programs. The faculty attitude can be summarized as "What's in it for me?" (Peterson 1975a, p. 8). For this reason, attempts to garner faculty support (at least in institutions where the program is not mandated by official decree) may focus on the identification of key faculty members who can sway faculty opinion and on the identification of issues that faculty members are interested in (RuBino 1975, pp. 9-11).

In institutions where the competency program carries the weight of trustee and administrative support, faculty members are frequently educated into the new roles through workshops. Publicity for their efforts and alternative benefits (such as released time) may be employed to encourage the development of competency-related courses and to reward service on competency evaluation committees (See Meeth et al., 1974, p. 12).

Generally, a switch to competency programs is seen as a demanding change for faculty members, requiring new roles, perhaps putting them at the edge of their own personal competences. However, Conklin suggests that competency-based degrees will also yield a few benefits for professors. They will be relieved of grading, since only competency will count.* Students might come to regard professors as their friends rather than as adversaries. A competency approach might be the key to a fairer evaluation of professors themselves (Conklin 1972, p. 37).

New Role for Students

Although the new role for faculty members may represent the most pronounced change, students also play a different role in competency programs. Students are expected to make decisions, specify goals, evaluate personal skills, and select learning experiences that will lead to competencies. Frequently they must produce or perform some major work or project to demonstrate that the broad competencies are in fact achieved (see for example *Competence-Based Learning at Alverno College* no date).

Students are required to participate more actively in advising and orientation procedures, since for most students the approaches of competency-based education will be new (Knott 1975a, p. 54). One

*It should be noted that within the competency programs examined by the author the use of grades was retained for most courses that were considered as optional learning experiences; the courses themselves must contribute to the development of competencies by the students; it is these competencies that are assessed *outside* the classroom.

consistent theme with respect to students in competency programs is that they are different and not to be regarded as all alike. "An achievement-based baccalaureate . . . assumes different levels of initial competency and then goes out and actually tests the members of the incoming freshman class to determine precisely what those different levels of initial competency are. As a result of that testing, variable curricular programs are structured around the needs of students at varying levels of competency" (Giardina 1974, p. 114).

Students involved in competency programs, because of the greater expectation for decisions by them and heightened emphasis on what they learn, may know more about themselves and their progress. Generally, as they grow accustomed to the competency idea, they seek out learning experiences they believe will help them achieve the competencies they need for success in their progrems (Meeth et al 1974, p. 23).

One basic question about students in competency programs is whether all types of students can utilize the approach. This is important since the rationale at many institutions, particularly those funded by FIPSE, is to extend access and encourage greater equity in higher education. Answers will be needed as to whether or not the educationally disadvantaged are in fact well-served by a competency-based approach (O'Connell and Moomaw 1975, p. 65). Students who are prepared for traditional programs must be reoriented to utilize competency programs. Perhaps the educationally disadvantaged student will move more readily into the active role required by a competency program. Or perhaps the demands for independent work, problem solving, and preparation for assessment examinations will prove too difficult for students with weak academic preparation.

Administrative Support Structures

For a competency program to be successfully implemented in an institution, all the administrative structures must be geared to support a new approach to learning. One major obstacle to the success of competency programs may be the lack of fit between the requirements of such a program and the structures already extant in a university or college that are designed for the traditional "exposure" approach. Examples of systems and structures that will need to be different include a new recordkeeping procedure for use with attainment-oriented transcripts, a continuous registration system for personalized programs of study, and new tuition and fee systems (since

there may be no credit hours). As a result of these changes, new budget concepts will be required and new accounting procedures developed to monitor the expenditure of institutional funds. New counseling, advising, and admitting procedures will also be required because of the demands on students for more initiative in dealing with their own learning attainment (FIPSE no date (b), pp. 16-17).

Part of the problem of relating a competency program to the traditional world of higher education is caused by the concern for grades, credit hours, and recordkeeping. In theory, there is no need for either grades or credit hours with competency programs. While record of the attainment of competencies is necessary, a more basic requirement is for new and different forms of recordkeeping. Students may be starting and stopping at different points within various learning experiences, or participating in equally valid learning experiences of their own design (O'Connell and Moomaw 1975, p. 38). One solution to the problem of the different requirements for recordkeeping might be to keep dual record systems until sufficient experience is built up with the use of a competency-based record system (Meeth, cited in the above).

The implementation of a competency-based instructional program in higher education is a major step that affects numerous practices of an institution. Although implementation differs between a small liberal arts college and the program level of a large university, similar problems are encountered. The institutional mission must be decided upon before competency statements can be written. Since the achievement of competencies must be measured, assessment and evaluation efforts are a major enterprise. Learning experiences offered to students may be different and varied, but they must stand the test of contributing to the achievement of competence by students. Faculty and student roles are also different because the traditional role of faculty as providers of "knowledge" in a package and of students as passive consumers has been changed. Different roles are emphasized for faculty, roles such as evaluator and diagnostician. A much more active role is demanded of students. Other administrative structures and organizations must be modified to accommodate the basic changes brought about by the switchover to competency programs.

Competency Programs

There are a small number of varied competency programs in higher education in the United States today. As with many forms of nontraditional or innovative education, a comprehensive list of these programs does not exist. Mark Schlesinger has developed a list of institutions grouped roughly by categories that illustrate the range of programs and their geographic dispersion ("CBC: A Selected Directory" 1974, pp. 4-5; FIPSE no date (a); Schlesinger, June 18, 1975a, pp. 2-3). An asterisk designates programs discussed in this chapter.

Liberal Arts Colleges:
- Alverno College, Milwaukee, Wisconsin*
- Mars Hill College, Mars Hill, North Carolina*
- Oklahoma City University, Oklahoma City, Oklahoma
- Our Lady of the Lake College, San Antonio, Texas*
- Sterling College, Sterling, Kansas*

Human Services:
- Center for Human Potential, Elgin, Illinois
- College of Human Services, New York, New York
- College of Public and Community Service, University of Massachusetts, Boston, Massachusetts
- Seattle Central Community College, Seattle, Washington

Other Professions:
- Antioch School of Law, Washington, D. C.
- Case Western Reserve University, Cleveland, Ohio (Ph.D. program in Organizational Behavior)
- Mount Hood Community College, Gresham, Oregon (Nursing)

Nontraditional Studies:
- College IV, Grand Valley State Colleges, Allendale, Michigan
- Community College of Vermont, Montpelier, Vermont
- Minnesota Metropolitan State College, St. Paul, Minnesota*
- School for New Learning, DePaul University, Chicago, Illinois

Disciplines or Areas:
- Central Washington State College, Ellensburg, Washington (Biotechnology)

Curriculum of Attainments Project, Florida State University, Tallahassee, Florida*

Rice University, Houston, Texas (Astronomy)

Sangamon State University and Illinois Central College, Springfield, Illinois (History)

Others:

Bowling Green State University, CUE Center, Bowling Green, Ohio*

Program Descriptions and Study Questions

The best way to comprehend both the general nature of competency programs and the sense of development and flux that permeates them is to review several descriptions of the individual programs. For this reason, eight programs are described based on proposal statements, catalogs, and evaluation reports that were provided to the author in response to written requests. It is stressed that these programs have traditional higher education counterparts, that is, either a liberal arts or nontraditional focus. The programs described are those for which program descriptions were available and no other selectivity criteria were used.

Since in some cases topics are parallel and in other cases not, the reader might find it helpful to consider the following questions:

1. What circumstances caused the formation of the program?

2. What institutional goals are expressed through the program?

3. What is the nature of the competencies required of students in the program?

4. In what manner are learning experiences provided to enable students to achieve competencies?

5. What institutional provisions are made for the assessment and evaluation of student progress?

6. What supportive and guiding measures are provided for students who enter the program?

7. What measures have been taken to facilitate the development of faculty talents and attitudes necessary for a competency program?

8. In what manner do administrative structures and procedures reflect the special needs of a competency-based instructional program?

9. What evaluation procedures are employed for the total program?

Alverno College

At Alverno College, Milwaukee, Wisconsin, the competency-based learning program resulted after a period of development from 1971 to 1973, during which outcomes of liberal learning were identified and stated as competences or skills to be achieved. In addition, "a major effort to identify how to assess such competences on a criterion-referenced, rather than a norm-referenced, basis occupied all of the 1972-73 academic year, as did an effort to devise a system to make such assessment the basis for awarding degrees at Alverno" (Read 1974, p. 4).

The educational process at Alverno as it is presently described represents the consequences of the decision by the college to explicitly state the definition of the degree awarded in terms of demonstrably achieved competencies. The process also reflects the institution's philosophy of education or the belief that Alverno graduates should be individuals who have achieved freedom by developing responsibility for themselves and for society. In the past, the college sought to achieve this purpose by transmitting culture and heritage. Today, the college operates with different assumptions, viewing change as a fact of life, with information readily available because of technology. In this context, the responsibility of educated persons is to direct change using informational, technological, and conceptual tools. The college will be living up to its philosophy if it provides its graduates with the tools necessary to live by today, such as how to analyze, judge, and use information, and clarify beliefs and act on them (*Competence-Based Learning at Alverno College* no date, p. 1).

The philosophical objectives of Alverno are expressed in a curriculum design called "liberal learning in a management context," which is intended to combine a functional definition of liberal education—including a set of student goals to be accomplished for personal development—with planning for management of change, for academic experience, and for professional direction (pp. 1-2). Competence-Based Learning (CBL) is the strategy that will integrate these elements. CBL student goals become competences that must be achieved before the student can graduate.

The Competences—Eight competences or student goals have been identified by Alverno. These competences must be achieved if a

person is to be able to manage his/her life, make decisions, develop initiative, and be responsible and confident. The eight competences are:

1. Develop effective communication skill.
2. Sharpen analytical capabilities.
3. Develop workable problem-solving skill.
4. Develop facility in making independent value judgments and independent decisions.
5. Develop facility for social interaction.
6. Achieve understanding of the relationship of the individual and the environment.
7. Develop awareness and understanding of the world in which the individual lives.
8. Develop knowledge, understanding, and responsiveness to the arts and humanities (pp. 2-3).

Each of the eight competences is divided into six functional levels of attainment. Within each competence the levels represent progressive complexity, although a given level of one competence is not equivalent to the same level in another competence, nor is one level within one competence equivalent to another level in the same competence. Each competence is divided into levels according to a specific rationale (p. 5). For example, competence 7, "develop awareness and understanding of the world in which the individual lives" has the following levels:

1. Demonstrate awareness, perception and knowledge of observable events in the contemporary world.
2. Analyze contemporary events in their historical context.
3. Analyze interrelationships of contemporary events and conditions.
4. Demonstrate understanding of the world as a global unit by analyzing the impact of one society upon another.
5. Demonstrate understanding and acceptance of personal responsibility in contemporary events.
6. Take personal position regarding implications of contemporary events (Read 1974, p. 14).

Level 1 of competence 7 then is further specified:

> For two international, two national, and two local events: Identify issues and significant personnel; state associations concerning short- and long-range implications of a given event for a related area, e.g., the economic implications of a political event, the psychological implications of a scientific or technological event; identify those aspects of a given local event which account for its significance. (Competence based learning at Alverno College no date, p. 9).

Use of the levels permits the demonstration, assessment, and cre-

dentialing of learning and attainment and also makes it possible for the college to specify to a student what she must do to graduate. Generally, to graduate a student must achieve level 4 on all 8 competences, achieve level 6 in at least one, and achieve level 5 or 6 in 7 other competences. The student's transcript specifies the competences and levels achieved by the student.

Administrative Structures—The student who registers at Alverno is seen as beginning a process that will enable her to shape and organize future learnings for her own benefit. Through an advising office, the student is assisted in making the correct educational choice for her goals. As in many such programs, there is an emphasis on self-evaluation and the student inventories, analyzes, and evaluates her own competences, then constructs a design to improve and build on.

After the evaluation process, the student can choose from the available learning resources that include courses converted into modules, off-campus experiences, and individualized study-packets. When a faculty member offers an instructional experience, the faculty member is expected to identify how the experience will enable the student to learn. The emphasis is on providing alternate approaches to learning that are free of the usual time-and-space restraints. "A student in search of competence cannot wait for a given course in a given room at a given semester and hope to achieve a given competence there" (p. 8).

In planning toward a professional goal, students identify their own goals and design a program that includes the content they need, an inventory of the "data base" that must be mastered, and the competences required. The area of concentration becomes the integrating focus for the high-level-competency learning experiences. Thus, a student might design a one- or two-year program aimed at satisfying levels 5 and 6 in three competence areas (p. 8). The academic disciplines are redefined by the faculty in terms of achievement of level 5 and 6 within competences.

Assessment of Learning—With the competences and levels specified in advance, the student may have achieved a level of attainment in a competence at the time of the initial assessment. This is, in effect, advanced placement. From that point on it is a matter of satisfying the requirements for each level of the competence. What knowledge is required to attain a given level and which instruments will be used to ascertain that achievement are known by the students and faculty. Assessment personnel working from the assessment center

are interested only in what the student knows and can do. The assessment center also functions as a clearinghouse for assessment procedures and instruments for use by faculty, since some assessment is done during class procedures using instruments designed and administered by individual faculty members.

External assessment is also done by a trained team that evaluates the achievement of students. For example, the team for a level 1 competency might consist of a faculty member, business or professional person, alumna, and advanced students. The assessment team observes the performance, records it in specific terms, and comes to a consensus as to whether the student has met the predetermined criteria. Then, feedback sessions with each student serve as a basis for future learning. Upper-level assessments will require more time since external specialists and interdisciplinary teams may be required. Thus, the professional-area, level 6 assessment for a student is regarded as a major procedure—"an evaluation of the total effectiveness of that student as a productive person" (p. 11).

Mars Hill College

The competency curriculum established at Mars Hill College, Mars Hill, North Carolina had its beginning in 1967-68 when the college began to use service-learning, internship programs, tutoring, and community development activities that involved the faculty in answering questions such as, How do you evaluate an internship? What are the criteria you are going to use to evaluate these experiences? How much academic credit do you give for field experiences? (Hoffman 1975, p. 42). Several innovations were begun as the faculty sought answers to these questions; but a more fundamental question, what the mission of the college should be relative to the competency approach, remained to be dealt with. In 1971 a special committee of the college studied the competency curriculum to see if it could focus the efforts of the college by defining its purpose in terms of eight or nine competencies and by developing experiences to reach those competencies (p. 43). Could the college live up to the statements made in the catalog about what it does for students? A grant from the Kellogg Foundation made possible a two-year study, at the conclusion of which it was decided to give it a try. In Hoffman's view the decision to pursue a competency program was done at great risk, since enrollments were strong and finances vigorous. Nevertheless, the competency approach enabled the college to pull many fragmented programs together. The Mars Hill program is conceived as

"a curriculum in which the competencies expected of all graduates are defined, agreed upon, and publicly stated, and in which learning experiences are designed for the purpose of assisting students in attaining those competencies" (O'Connell and Moomaw 1975, p. 41).

Curriculum Concept—The competence curriculum at Mars Hill has been explicated in several publications by Robert Knott, who served as an associate dean at the college while the program was developed. According to Knott (1975a), three assumptions were behind the curriculum design at Mars Hill: (1) the belief that "learning is a total experience which extends beyond the classroom in time and place"; (2) that "the student's individual development is at the center of the curriculum"; and (3) that "students are characterized by multiple talents and differing levels of talent development" (pp. 44-45). Mars Hill is not a selective institution. The range of student ability, as assessed by the usual measures, is very broad. Thus the college faced the question of how to work with each student according to his or her ability at point of entry. Also, concern was felt that there had been no method to diagnose student knowledge and ability prior to beginning one of the nontraditional learning experiences. The competence model permitted the college to focus on both student outcomes and needs.

In order to organize the competence curriculum, it was necessary to agree on a working definition of liberal education in terms of the purpose of the institution. According to Knott, "liberal education is conceived at Mars Hill College as a process which develops specific human capacities rather than as a set of studies with inhering liberal qualities" (p. 46). This could be brought about if the college focused on three abilities—"to formulate and critically examine purposes; to design and act upon means of executing purposes; and to assess the consequences of action on selected or formulated purposes" (p. 46).

In working out a design for a curriculum that would lead students to these abilities, the college identified four dimensions:

1. Analytical Division of Human Knowledge—Some starting point is needed so that the student can begin to perceive how mankind has tried to make sense out of the world using facts, theories, institutions, sense experiences. Mars Hill turned to six realms of meaning conceived by Philip Phenix. These are symbolic communication, sciences, esthetics, personal knowledge, ethics, world view (p. 46).

2. Advanced Expertise—The student needs an advanced area of expertise through which to implement the purpose he has selected

and to "develop competence in executing and acting on purposes" (p. 47). This dimension would include the specification of minimal competencies, the ability to apply higher order knowledge to the field, and the ability to synthesize knowledge of the area and relate it to broader knowledge while constructing purposes and means (p. 47).

3. A Developmental Model—It was recognized that students will be moving through a process and will not all come to the beginning of the curriculum at the same point in their personal development. Thus, some guideline was needed for the development of students as persons. Arthur Chickering's developmental tasks were chosen. These include such goals as "a sense of confidence in intellectual social-interpersonal and physical-manual skills" and "managing emotions."

4. Institutional Values—The curriculum design ought to reflect values of the institution without requiring their acceptance, serving as a guide for learning experiences, and for campus life. Such values included to "create and sustain in the college community a lively encounter between faith and learning" (p. 47).

Once the dimensions and purposes were agreed upon, the curriculum could be constructed to reflect a series of competence statements, their components (skills, knowledge, and attitudes), and assessment criteria for those skills, knowledge, attitudes, and experiences that would lead to the required competencies. Moving from agreement on broad competences to the specification of curricular experiences is the difficult part. As Knott suggests, to specify that a student will be autonomous is one thing, to measure it quite another. Thus, what an experience in the curriculum will lead to must be reduced to that which can be accomplished and measured. As is true with many competency programs, it turned out to be easier to specify and measure cognitive competences than to specify affective competences (p. 49).

Seven Competences—At Mars Hill College, seven all-college competences have been agreed on.

1. "A graduate of Mars Hill College is competent in communication skills" (p. 49). Three areas are included by this competence. One is proficiency in the reception and expression of ideas and in understanding relationships of language and emotion; two is creative and critical thinking skill; the third is proficiency in group communication (pp. 50-51).

2. "A graduate of Mars Hill College can use knowledge gained in self-assessment to further his own personal development."

3. "A graduate of Mars Hill College comprehends the major values of his own and one foreign culture, can analyze relationships of values between the cultures and can appraise the influence of those values on contemporary societal developments in the cultures" (p. 49).

4. "A graduate of Mars Hill College understands the nature of aesthetic perception and is aware of the significance of creative and aesthetic dimensions of his own experience which he can compare to other cultures" (p. 49).

5. "A graduate of Mars Hill College understands the basic elements of the scientific methods of inquiry, applies this understanding by acquiring and analyzing information which leads to scientific conclusions and appraises these conclusions" (pp. 49-50).

6. "A graduate of Mars Hill College has examined several attempts to achieve a unified world view and knows how such attempts are made. The graduate is aware of the broad questions that have been posed in the history, philosophy and religion of western civilization and can assess the validity of answers given to these broad questions in terms of internal consistency, comparative analyses and his own position" (p. 50). Knott observes that "if taken seriously" this is a "stiff requirement."

7. "A graduate of Mars Hill College is competent in an area of specialization" (p. 50).

Institutional Implementation—If Mars Hill graduates are indeed to demonstrate their mastery of these seven competences, it is necessary that there be clearly delineated evaluation procedures. At Mars Hill, student mastery of competencies, faculty competence in designing and making curricular experiences, and the total curriculum are subject to evaluation through the assessment center, which also assists faculty to develop skills to perform their assessment and evaluation roles (p. 52).

An assessment team has been established for each of the seven competences. The major task of the teams is "to clarify criteria and standards by which students may demonstrate competence in a given area" and to be "responsible either for assessing each student or delegating that assessment and then monitoring the process where it is delegated" (p. 53). A continuing group of faculty and community people work on the teams. One of their responsibilities is to provide to the competence faculties (those teaching in the basic competence areas) information on student progress as well as an analysis of the problems students are having. This is an attempt to encourage flexibility and experimentation in instruction while providing feedback on the results of that instruction (p. 53).

Students are started on their competency program by a mentoring-advising program that begins during orientation week. In this process they are given extensive diagnostic tests to determine their level of academic abilities, skills, and background. A schedule of 35 developmental tasks is begun. These tasks range from "simple goal setting to careful self-analysis of his or her own values" (p. 54). The faculty and student mentors also work with each student in designing a tentative study plan that will lead to achievement of the seven competences. Intensive counseling is provided to assure that the competency program works.

Our Lady of the Lake College

At Our Lady of the Lake College, San Antonio, Texas, the competency-learning project evolved from the report of a development committee. The committee, originally appointed in 1967, published its report in 1970 and recommended that the college adopt a curriculum based on the development of competencies and skills, use a more flexible calendar, try more varied learning activities, and implement a freshman learning-to-learn course. In 1971, a college-wide meeting was held to work out the ideas suggested in the report. In April 1971, the faculty adopted recommendations that a new degree program be implemented that would require graduates to show competence in four basic areas of knowledge, such as "Man's Artistic and Literary Expression," and in ten lifetime skills, such as "Philosophical and Theological Questioning and Reasoning." Although it was intended that these areas would replace required courses and be a framework for a general education program, the volunteer work of faculties in isolated skill and knowledge groups produced only vague competency statements without evaluation criteria. There was little coordination of the program and students were not clear about what was required of them (Our Lady of the Lake College 1975 [pp. 224-225]).

The FIPSE Grant—In 1972, a proposal accepted by FIPSE gave the college an opportunity to improve the effort toward a competency program. The proposal was directed at planning and implementing an integrated competency-based learning program, recognizing the need for change from within, and providing for release time for faculty members who would act as change agents. The salary of a project director would be provided by the college.

Under the terms of the proposal, the Project has nine short-term objectives:

1. To identify specific learner competencies related to the major life-time goals of the College's general education curriculum.
2. To identify learner competencies for each area of post-college endeavor for which OLL students are preparing.
3. To describe every course and learning activity in terms of its specific competency objectives.
4. To construct and/or select appropriate entrance and exit competency assessment instruments.
5. To identify and design a wide range of alternative learning activities, environments, and schedules to assist individualized learning.
6. To implement necessary systems changes in admissions, scheduling, faculty usage, evaluation, and credit procedures in order to support competency-based learning.
7. To assist all members of the academic community to function effectively in a competency-based learning program.
8. To design and implement an orientation and personal development process to (a) interpret the College's philosophy and goals to its campus community; (b) assist students to make responsible choices and decisions in their academic programs; (c) provide continuing professional development for administrators and faculty.
9. To alter organizational techniques (e.g. financial aid, registration, billing, etc.) to align them with the goals and processes of an individualized and competency-based program (p. 226).

In addition to the nine specific objectives, five long-range objectives are to be pursued. They demonstrate the relationship of the project's implementation objective for a competency program to the broader concerns of a small, private liberal arts college caught up in bigger change.

1. To implement an open, competency-based learning program which will (a) have a solid, liberal arts base; (b) meet the needs of a highly diversified clientele; (c) make accountability for learning a shared responsibility of student and teacher, with major responsibility on the student.
2. To produce a liberally educated, self-directive, socially conscious graduate, of upright moral character, who is able to "be for himself" and to "do for others."
3. To contribute to the improvement and enrichment of the local community and of society in general.
4. To increase the cost effectiveness of the educational program of the college.
5. To provide a successful example of an effective competency-based program for other institutions wanting to engage in similar educational programs" [p. 227].

With resources from the FIPSE grant, a team of change agents drawn from within the institution has been set up to plan and coordinate the development of the competency program and the systems needed to support it.

Implementation and Evolution of the Competency Program—The competency-based general education program at the college, approved in April 1971, had requirements set forth as areas of knowledge and lifetime skills. These requirements were stated as follows:

> In order to graduate from Our Lady of the Lake College, the student must demonstrate competency in the following areas:
>
> 1. Knowledge Competencies
> A. Man's nature, his being and becoming, his origins and destiny, his aspirations and values.
> B. Man's diverse cultures and institutions.
> C. Man's environment, both natural and technological.
> D. Man's artistic and literary expression.
>
> 2. Performance Competencies
> A. Philosophical and theological questioning and reasoning.
> B. Effective use of the English language in speech and writing.
> C. Effective understanding and practical use of mathematics.
> D. Effective understanding and use of abstract symbols.
> E. Ability to use the scientific method.
> F. Planning, projecting, and using historical perspective.
> G. Adapting to cultural and linguistic diversity.
> H. Creative self-expression.
> I. Self-fulfilling use of leisure.
> J. Ability to care for the body and to exercise intelligent control over its movements.
> K. Ability to relate to others effectively [p. 16].

These loosely defined competencies, without clear evaluation criteria or processes for assessment, made the program less effective than was desired. Responsibility for compliance rested with students and their advisers. Without criteria or a clear statement of what the competencies were, compliance was a matter of individual judgment. The first target of the competency program was the specification of general education competencies. Change agent teams began to rough out basic competence areas using Phenix's *Realms of Meaning* as their basic knowledge framework and Bloom's *Taxonomy of Educational Objectives* to specify the levels of attainment. Open meetings were held from September 1974 to March 1975. In late March the faculty approved the following competency statements, developed by the teams, and required their application to freshmen registering after May 1974:

> Graduates of Our Lady of the Lake College:
> 1. Have developed effective communication skills.
> 2. Have acquired sufficient understanding of their ever-changing physical environment to cope effectively with it and make responsible and intelligent judgments about it.

3. Have attained reflective and critical perspectives on their personal and social growth and interpersonal relationships.
4. Have achieved a reasoned, integrated understanding of the religious and ethical dimensions of human experience, both personal and social.
5. Have developed a discriminating perception of the artistic elements of their culture and, through synthesis, other cultures; and have developed the ability to describe and demonstrate their creative processes.
6. Have formulated a logically consistent world view, have defended it reasonably, and have applied it in a simulated situation to their life style and to some social problems presented to them [p. 229].

Each of the six competency statements approved by the faculty had evolved from numerous drafts and proposals submitted to meetings and public discussion over a period of months. Thus, in October, one committee draft of competency 4 read "has achieved an adult, integral vision of the religious dimension of human life, in both personal and social aspects as exemplified especially in the Christian/Catholic heritage." A month later it read "[has] achieved an adult, integral understanding of the religious dimension of human life, in both its personal and social aspects" [(pp. 83, 101)].

The six general competency statements were accompanied by a set of tentative "dimensions of competency" intended to provide more direction to each competency statement. Dimensions of competency 3 are:

1. Significant growth in concern for community welfare, in respect for others, in regard for life as a universal human right.
2. Openness to one's own perception, defenses, biases, and prejudices; growth in self awareness and self-esteem and an awareness of life-time goals.
3. Development of effective social interaction.
4. Development of perspectives on culture, environment, and the role of social institutions and their influences on behavior [p. 68].

In addition to adopting the six competencies, the faculty also approved the establishment of six evaluation teams (one for each competency) to develop criteria and procedures for evaluation.

As the result of early experience in the project, plans to work out competency objectives for all courses in the general education program were replaced by the objective of specifying and defining the required competencies and acceptable levels of competence. After these are done, learning activities can be designed and course objectives specified. In other words, the basic position adopted was that, "instructors should know what competencies their courses are supposed to lead to before they are asked to design the courses and

specify course objectives" [p. 230]. This is more in line with the general competency program strategy of specifying learning objectives before developing instructional strategies.

A series of related programs and changes are designed to enable the college, its students and the faculty to become effective users of the competency program. For example, the mentor program will provide each freshman with two mentors (a faculty member and a sophomore or junior student) who will work with the student beginning with the August orientation and continuing throughout the freshman year. The mentor pair will have 17 to 20 students in a group that will continue to meet during the academic year as the Personal Development Seminar. The purpose of the seminar is to help the freshman to function effectively both academically and personally. Through the seminar, the academic and personal development of each student will be assessed and corrective work planned. Research and problem-solving skills will be taught along with techniques for improving interpersonal and group communication skills [pp. 231-232].

Because of the reliance of a competency learning program on assessment, one of the first administrative structures to be created following adoption of the program was an assessment center that will serve as a facility for resources for use of the evaluation teams, coordination of the evaluation process, and maintenance of student competency records.

The curriculum change to a competency model also requires changes in the administrative system.

> The largest modification is required by the increased flexibility of the competency-based system. The change of emphasis from a few tightly defined required course sequences to learning results achieved through alternative learning activities, with the associated movement toward credit by examination, experiential learning, and other non-traditional evaluation techniques, means that administrative systems must be restructured to support the competency curriculum [pp. 234-235].

At Our Lady of the Lake, this requirement is being met by a change from a batch-operation computer system to an on-line, interactive computer system, with terminals for display of student information at various points in the system.

To move toward the objectives specified in the FIPSE grant, the competency learning program will continue through the specification of evaluation criteria procedures by competency teams. Assessment instruments will be adapted or designed, competency statements

will be reviewed, and alternative learning experiences developed. As the results of these tasks are made known, faculty workload formulas will be revised to reflect the new faculty roles (p. 239).

Sterling College

The Board of Trustees at Sterling College, Sterling, Kansas, started the college moving toward a competency program by giving the administration a mandate to design a curriculum for the 1970's. A Task Force established by the president then set out to design a curriculum that would be relevant, flexible, and open-ended (Brownlee 1974b, p. 9). The Task Force recognized that Sterling College had assets and liabilities. It is a small, church-related college in the liberal arts tradition, with a good but not elite student body basically from rural areas and small towns. Most of the students are oriented toward service and career goals in college. Sterling is located in the middle of Kansas and there are several nearby community colleges. The Task Force decided that the selected curriculum would have to be student-centered. "What students really want out of a college like Sterling is relevance—and the way to be relevant is to develop a curriculum that is student centered, that puts emphasis not just on what the student knows but on what he can do with what he knows, that provides the climate in which to grow into a person who can take his place in society as a mature Christian, a productive citizen, a whole person—in short, a person who is competent" (p. 10). Nine competencies were decided on and a program was begun to provide the requisite experiences. The objective the college sought was a broad one.

> We felt that certification of competency could not rest upon mastery of subject matter alone, though we certainly recognized the importance of theory and of cognitive levels of knowledge. But we wanted to provide ways for students to learn by becoming *involved* through the affective and psychomotor levels of learning. We could certify competence for students who had had opportunities to participate actively in the learning process, to practice what they were learning, and to demonstrate the skills they were acquiring (p. 10).

The original set of competencies were specified in 1971. In the summer of 1972, the faculty spent much time with the competencies, clarifying language, establishing evaluation criteria, and designing learning experiences that could be used by students. This process continues. However, the original definition and refinement of the competencies provided the beginning for enormous change in the

college. "More significant changes have occurred in the life of Sterling College from July, 1972 through June, 1974 than in any other two-year period in the history of the college" (Meeth, Hodgkinson, and Brownlee 1974, p. 1).

Theory of the Competency Curriculum at Sterling—The theory of the competency curriculum at Sterling began with the recognition that the difference between a vocational and a liberal arts school is more than the difference in courses offered. It includes different objectives, a different organization, different presentation and evaluation. The objectives are determined by the vision the school has of the "perfect man." At Sterling, the objective is a graduate who can perform intellectually and practically, relating classroom matter to everyday problems of life. Demonstration of attainment of the nine competencies is required because of that vision. The nine competencies are stated as follows:

A Sterling graduate:
1. Comprehends the Christian heritage and its relevance to his life and community.
2. Is aware of his own values and commitments, of others' values, and of the alternatives.
3. Knows how to acquire knowledge and how to use it.
4. Understands the artistic and aesthetic dimensions of culture.
5. Comprehends the relationship of man to his physical and social environment.
6. Demonstrates proficiency in at least one discipline in depth.
7. Is competent in verbal communication.
8. Demonstrates physical skill in and knowledge of one or more recreational activities.
9. Is able to work in groups, studying, analyzing and formulating solutions to problems and in acting on them (Brownlee 1974b, pp. 10).

In selecting a course or learning experience for inclusion in the curriculum the college is guided by "The Principle of the Nine Competencies." Each course or experience must be evaluated in terms of its contribution to the nine competencies. Out-of-class experiences are also evaluated on this basis, with the understanding that such experiences "must challenge the student *intellectually* as well as practically" (Stone 1973, p. I-3). Another principle used in determining the curriculum is the "Principle of Choice," which means that the student should have as many course and learning options as possible in each competency area. Each department submits courses that are appropriate to a competency from which the student chooses. Courses are organized under the "Principle of the Non-heirarchical Structure of Knowledge." All distinctions have been

removed from upper-level and lower-level courses and between in-classroom and out-of-classroom experiences, since what the student learns is the prime consideration (p. I-4).

The curriculum at Sterling is viewed as being in evolution. It is assumed that the curriculum includes the total program of the college—academic, extracurricular, religious, dormitory, and social, as well as off-campus experiences. Wide choices are made available to the student.

> In this framework competency is *achieved* as the student involves himself in a combination of the theoretical and the applied through a set of learning experiences, some in class and some out of class, designed to provide him with the cognitive, the affective, or the psychomotor skills needed to reach the desired outcomes. Through classroom and field experiences provided in each competency the student has an opportunity to practice his skills and eventually to demonstrate them at the appropriate level. Competency is *assessed* by sandardized tests, by classroom teachers, by evaluation teams, by observation and measurement, and in many cases, by self-evaluation (Brownlee 1974a, p. 4).

The numerous experiences possible permit the college to use broad general competencies, thereby recognizing values as an objective and avoiding the specificity of behavioral objectives.

Moving Toward Graduation—The competency curriculum replaces the general education requirements that were required to graduate from Sterling. Requirements to satisfy the competencies are the equivalent of approximately two-thirds of the 124 credits for graduation, with the balance left for special training courses or electives. Only one course is required, "Methods of Inquiry," and in most cases competencies can be met through regular academic courses and field experiences. Academic course requirements can frequently be met by "quizzing-out," taking a standardized test, or doing an independent study or reading program. Field experience activities take place outside the classroom and require the student to become directly involved in an activity.

For the student seeking to satisfy Competence 1, "Comprehend the Christian Heritage and Its Relevance to His Life and Community," the catalog begins with a Clarification of Terms:

> Comprehend: To have knowledge of facts about. Christian heritage: The Christian religion and its historical development as well as the evidence of its effect on civilizations and cultures. Relevance to his life and community: Awareness of the implication of Christianity for the lives of its adherents both as individuals and in groups (Sterling College 1975a, p. III-4).

To achieve the competence, the student should demonstrate "A knowledge of the facts about the Christian Heritage. An ability to analyze the Christian forces at work in a particular situation. An ability to relate the Christian faith to other things he is learning. An ability to apply Christian principles to the solution of various human problems" (p. III-4). In order to achieve this specific competency, the student must satisfy an academic course experience or alternative requirement, a field experience requirement, and an analysis and evaluation requirement. Numerous paths are provided for the student to satisfy these requirements. The academic course experience or alternative can be met by taking one of a selected group of courses, or by passing a standardized test, or through an independent study project. The second requirement, field experience, can be satisfied in a variety of ways, such as "engage in classroom lesson planning and teaching for a learning unit" (in an area church), or by taking one of a second series of alternative courses. The third requirement, analysis and evaluation, can be satisfied by a senior seminar or through writing a major paper that demonstrates analysis and evaluation in this competency (p. III-5).

Impact of the Competency Curriculum on Sterling College—The impact of the competency curriculum on Sterling College has been assessed in an evaluation study written about Sterling by Richard Meeth, Harold Hodgkinson, and Carol Gene Brownlee, who have been involved in the changeover at the college as consultants and administrators. The competence program has brought about changes in providing learning experiences because students want to know if courses they take lead to competence. Ten new interdisciplinary courses, such as "Values, Society and the Individual," have been developed, and new out-of-class learning experiences have been designed by faculty members and students.

The original competence program at Sterling was concerned with general education requirements. However, the competency-approach has been extended to academic majors too. In the fall of 1973 all departments undertook the task of developing competency-based majors by following three steps:

1. A statement of competencies to be required for the major.
2. An explanation of the methods to be used in assessing the competence and criteria by which the competence would be evaluated.
3. A list of both in-class and out-of-class possible learning experiences which the college might supervise or provide which would lead students to achievements of competence in the major (Meeth, Hodgkinson, and Brownlee 1974, pp. 6-7).

Four interdisciplinary majors have been developed that are designed to lead to careers for rural-oriented students. Acceptance of the value of out-of-class learning and design of evaluation procedures for those experiences led to acceptance by the faculty of the concept of review of prior learning of adults as the basis for granting them credit.

Because of the unique nature of the competency curriculum, a freshman advising and orientation session has been created that includes team advising for groups of 15 freshmen led by two students and a faculty member. In the program, student learning abilities and needs are diagnosed and the student's learning program is designed. Students who find they need assistance with learning skills can turn to a Learning Resources Center equipped to help students improve their skills as well as to help faculty members improve their teaching materials.

Some monitoring of the curriculum is accomplished by the eight evaluation teams that focus on the competences. Teams may be composed of faculty, townspeople, and students. They direct the out-of-class learning experiences of students and evaluate their meaning. Competency descriptions and requirements are also rewritten on the basis of student experiences. Although progress has been made toward the development of evaluation criteria and methods for each competency at Sterling, much work remains to be done if a competency program is to be totally implemented. Most progress has been made toward better assessment instruments for cognitive aspects of competences. However, "almost no progress has been made toward developing instruments or methods for assessing overall competence . . . [since] at the present time no student can test into a competence" (pp. 11-12).

The importance of faculty development in this program has not been overlooked. Faculty members are beginning to see a new role for themselves: "With the new emphasis on competency and on the tools of learning, the faculty members at Sterling are gradually shifting in their perception of themselves from dispensers of knowledge to facilitators of learning and evaluators of competence. Advising is increasingly regarded as a teaching function and included in the teaching load" (p. 12). Of course this change has been promoted through workshops and changes in the reward system. In addition to public recognition, money and time are made available for faculty members to develop competence-related courses and serve on evaluation teams.

The role of students also has changed at Sterling. More and more out-of-class learning experiences are being designed by students, because students recognize that what they learn counts if it fits a competency. Generally, students seek the most efficient avenues to competence, which leads them to be less adventuresome in choosing courses; they are also slow to seek assessment of their experiences (pp. 17-18). Courses that meet competence criteria are popular with students, and faculty have been asked to rework those courses that do not meet the criteria (p. 16). One benefit is that student attrition has apparently declined because of the better advisor system and the competence program.

Minnesota Metropolitan State College

The four previously discussed institutions were small, private liberal arts colleges. Competency programs are also used in nontraditional colleges such as Minnesota Metropolitan State College and School for New Learning at DePaul University in Chicago, Illinois.

Minnesota Metropolitan at Saint Paul was organized in 1971 by action of the state legislature and began operation in early 1972 with a small group of students and faculty members. The basic tenets of the college are simple: "Students have responsibility for, and authority over, their own education. They are responsible for formulating their educational goals and they exercise ultimate authority over implementing those goals" (Minnesota Metropolitan State College 1972, p. 2). The purpose of faculty at the college is to teach students how to plan and carry out their own programs of study. Secondly, the college is urban-oriented; students are expected to focus on the needs of the city as well as to learn how to live in an urban area. For this reason, the college has no formal campus. Rather, the facilities and agencies of the city are utilized. The third tenet around which the college is designed is that

> students at MMSC will acquire competencies rather than accumulated credits. A competent person is one who has a combination of knowledge and skills (both mental and motor skills), understanding, and values and attitudes represented in five broad areas which are as follows:
> - *Basic learning and communication competence* is the ability to be a self-directed continuing learner and to utilize and develop learning strategies available in an urban environment (p. 2).

This includes being an effective communicator in several different ways.

- *Civic competence* is the ability to be an *informed* self-governing member of the community and to participate in the community. The community is not just a political entity but also an economic, cultural, religious, and social entity. The competent citizen understands what his community is doing to him and how he can act on it (p. 2).
- *Vocational competence* is the ability to be a useful, productive person and in so doing be able to move occupationally within an increasingly unstable job market (p. 2).
- *Recreational competence* is the ability to explore new interests and activities and enlarge on old ones so that one constantly can draw on these resources for continued growth and the enrichment of one's quality of life (p. 3).
- *Self-assessment competence* is the ability to look at oneself, to identify one's strengths and limitations, to be able purposefully to set goals as a result of taking inventory, and to plan and carry out strategies which make possible the realizations of those goals (p. 3).

Thus at Minnesota Metropolitan, a set of competencies are specified as part of the basic organization of the institution. The operational practices of the college are designed to permit the student to pursue these competences in five basic phases. Following application and admission, the student participates in orientation, during which he completes a "Competency Analysis" and describes the competences he already possesses. In addition, the analysis assists the student to identify his educational goals and needs that constitute the Educational Pact, which is the individual's personal curriculum. The five competency areas are provided as a "guide" (p. 4).

After the educational pact has been agreed to, the student engages in learning activities such as independent study, internships, and group learning experiences, that are set forth in the pact. The last step is the final evaluation, which is designed to verify the competencies the student states he or she has acquired as outlined in the Educational Pact. Upon proper certification of the competencies, the College awards the degree (p. 4).

School for New Learning, DePaul University

The School for New Learning, DePaul University, Chicago, Illinois, is another nontraditional college for adults that employs a competency program with contract learning and individualized curriculum. Adult learners at the school have responsibility for designing their own education. (Students must be twenty-four years of age or older.) However, to gain a bachelor's degree, the students must demonstrate competency in all of five competency areas (School For New Learning, no date, pp. 1-4).

1. "Vocational/Career." This requires generic skills in one of

three subcategories that would allow the student the option of acquiring meaningful work skills. These may be in "Developing and Managing Organizations," "Social Service and Health Care," or "Professional Preparation."

2. The second competency is "Communication/Interpersonal," which requires demonstration of an understanding of verbal and nonverbal communication with attention to how human relations affect communication.

3. "Community of Man," which is basic social science.

4. "Quality of Life-renewal: how to recreate oneself through art, leisure activities, humanities, philosophical or spiritual concerns."

5. "Lifelong Learning," including ability to set personal educational goals, create independent learning situations, and locate resources (pp. 1-2).

Each competence area consists of a list of specific behaviors (skills, knowledges, attitudes and understandings) that can be demonstrated in a number of different ways, according to the student's own interests and goals (p. 2).

At the School for New Learning there are eight phases the student passes through on the way to a degree. First the "Discovery Workshop," a small group experience, permits the student to articulate his educational goals and feel more comfortable about returning to education. Then a personal dossier is constructed as a basis for evaluation of life experiences and admissions. Then life experiences in portfolio form are evaluated by a committee. In cooperation with the student, the committee negotiates a learning pact designed to specify what skills the student has and those he must learn. As a next step, the student fulfills the requirements of the learning pact, including a required internship "major piece of work." In the final evaluation, the committee, the student, and the evaluation division of SNL appraise whether the student has fulfilled the contract. Finally, in an exit seminar, the transcript is constructed (describing the acquired competencies) and the student is able to evaluate his educational experience (p. 4).

The author was able to review the set of "competencies and facets" as they are known at SNL, that have been put together to provide a large number of subcompetencies that each student must demonstrate in order to earn the degree. Unfortunately, this list was not available for public scrutiny. However, the nature of the subcomponents of each competence can be seen in the description of a

course offered in summer 1975. The course called "The American Dream: Literature and Film" offers competences in "Communication/Interpersonal" that are specified for the student prior to enrollment:

> Upon successful completion of this course, a student will:
> 1. Have demonstrated critical faculties of analysis, comparison and evaluation in understanding the elements of form, content and style (II-3) and any ONE of the following:
> 2. Understand and be able to use symbolism in communications (II-8) or
> 3. Understand the vocabulary of two art or craft forms (IV-3) or
> 4. Be able to participate in one form of "entertainment" so as to demonstrate the value of it to enhance the quality of life (IV-4) (School for New Learning 1975, p. 5).

Florida State University, Curriculum of Attainments

Competency programs also exist in large public universities either as distinctive degree programs or as special program efforts. One example is underway at Florida State University in the Curriculum of Attainments project. The principal concept of COA is that college degrees should be awarded on the basis of demonstrated competencies without regard to the amount of time required to attain the competencies. Attainment-based degree programs are underway in biology, nursing, and, at the master's level, in urban and regional planning. Each program is based on a faculty mentor working with fifteen to forty students. Juries consisting of at least two faculty members and a professional assess and certify achievement of attainments. The mentor assists students in acquiring tutorial assistance and utilizing the available individualized learning packages with the intent of achieving a prescribed level of proficiency. Five more programs are being established that will follow the general reform principle of using small pilot programs within existing departments (Peterson 1975b, p. 1).

Background Conditions—Several conditions prevailed at FSU that encouraged the establishment of the Curriculum of Attainments (Peterson 1975a). For one, the legislature had considered a bill that would have required a three-year degree from the state universities. Hence, chancellors of the state universities were looking for proposals for programs that would lead to time-shortened degrees. However, money to make COA a reality came from an outside source, FIPSE.

Peterson identifies four other factors that facilitated development of the COA at Florida State. The existence of an instructional development service meant that coordination, expertise in instructional design, knowledge about assessment of learning, and program evalua-

tion techniques were available. Many department chairmen indicated an interest in the project, as did the central administration. In addition, the registrar's office provided significant cooperation, since the change from a conventional, time-based education to the attainment curriculum required major alterations in the type of information collected. Constraints on development of the program included the conservative faculty attitude of "What's in it for me," a myriad of university regulations that had to be circumvented, insufficient financial resources, and an inadequate number of faculty members qualified to serve as mentors. Peterson sees the latter as the most serious constraint, since mentoring requires skills that are not normally possessed by typical faculty members (pp. 7-8).

The COA Program—The COA addresses four major concerns of higher education:

1. How can creditable standards of student mastery be maintained in mass higher education?
2. How can one directly credit students for their achievement without regard to time, place, or circumstance of learning?
3. How do you recognize and reward cost-effective strategies of instruction?
4. How do you provide an educational structure that gives instructors flexibility in means and pace of instruction (Harris 1975, p. 2)?

With normative grading (grading against "the curve" rather than against an absolute standard) mass higher education can only lead to lower standards. One solution would be to raise admission standards. On the other hand, open admissions can be maintained if credit and degrees are awarded on the basis of performance evaluated against predetermined standards. This is the approach implicit in COA. Teaching is separated from assessment and certification, and performance standards are agreed to before instruction is sought. After instruction, a jury assesses student achievement, awards the credit, and then the degree (p. 3). Harris also sees the COA as producing more efficient instruction and better use of educational technology. With teachers not directly responsible for certification, their methods can be evaluated on the basis of effectiveness and student appeal. Use of criterion-referenced performance assessment also permits feedback to the instructor on the effectiveness of instructional practices. Harris also sees COA as a method to break the assembly line impersonality of mass instruction (p. 5) because the mentor is personally responsible for the progress of his group of students.

Implementing COA—At the departmental level, major concerns of the implementors of COA were with how faculty support could be generated and how planning stage activities could be most productive (RuBino 1975). The concerns and issues of interest to key faculty members that COA might be responsive to were identified. Many departments saw the program as an opportunity for experimentation in instruction or as a way to work with students as individuals. In those departments where interest in COA was maintained, a small cadre of highly interested supporters steered the proposals through the appropriate committees (pp. 9-11), which enabled the program to get started.

In terms of COA implementation, "articulation of competencies is the most crucial task in instituting a competency-based program. This task is also the most difficult. Individualized instruction and unique assessments are insignificant if the competencies identified are neither relevant nor essential" (Haynes 1975, p. 13). The competency statements employed with the COA specify behaviors to be attained by the learner and consist of a knowledge or skill area, an assessment task a student must perform, and a prescribed level of proficiency. Two levels of competencies are used in the COA programs. On one level are the generic competencies that describe each program in terms of broad areas of knowledge and skill. There are 20 specified in nursing, 18 in marine biology, and 28 in urban and regional planning. At the second level is a taxonomy of specific measurable competencies, of which they may be 150 to 200 per program. For example, a generic attainment in marine biology is "knows and applies basic principles of descriptive oceanography." A specific competency for that generic competency is "defines tide wave types: semi-diurnal, and mixed" (p. 13). These competencies were written by mentors and juries. Haynes cautions that the competency statements are never finished and that the general tendency is to expect far more from students in competency programs than would be required of them in the usual curriculum.

In COA, student attainment of competencies is assessed on the basis of the student's progress through learning packages for the specific competencies; a jury evaluates the achievement of students toward the generic competencies (pp. 13-14). The jury process is not without problems. Juries may devote too much attention to one topic or disagree about their evaluation. However, the basic responsibility of the jury is to assess and certify the student's attainment of the generic competencies prior to graduation. Traditional letter

"grades" are issued on the basis of attainment of the specific competencies and completion of learning packages (p. 15).

Bowling Green State University

Another type of competency program is in use at Bowling Green State University, Bowling Green, Ohio. Here the competency element is subsidiary to concern with general education requirements, but subject to development-oriented research effort. In the fall of 1969, the Provost of Bowling Green State University called together a group of faculty who were known to be interested in the problems of lower-division general education. Following this meeting, four faculty members organized a course known as Little College. This course developed into a set of courses emphasizing the development of critical thinking skills through pedagogical experimentation. In spring of 1972, with the aid of a Carnegie Corporation grant aimed at time-shortened degrees, the Modular Achievement Program (MAP) was created. "The authors of the MAP proposal hypothesized that an intensive freshman year learning experience made up of modules emphasizing critical thinking, communication value clarification, and problem solving, would provide adequate general education preparation for some students who would then be able, at the end of the freshman year, to move directly into a program of specialization and 'diversification' supportive of that specialization" (Giardina and Litwin 1974, pp. 1-2). One outcome of the MAP approach was that general education requirements for a degree could be articulated in terms of outcomes or achievements rather than course hours.

Competency Development in MAP—In the MAP program the idea of what competencies are has evolved slowly. Originally, competencies were visualized as cognitive and communication skills, knowledge of man-universe relationships (the general education components), and professional specialization and supportive diversification. The attempt to translate these areas into specific operational terms was hindered by a lack of valid, reliable instruments. Later, competencies included critical thinking skills, communication skills, general knowledge in the traditional disciplines, and proven ability to achieve in classes at BGSU. This resolution of the competencies was in some measure a move from the original goal of MAP,

> [which] assumed that the collection of 'units of information' and the exposure to various disciplines are not by themselves proper definitions of general education, in that the development of a number of intellectual processes and cognitive strategies in students is the larger function of general education. A more complete set of competencies would include skills in problem-solving, value clarification, self-direction, and informa-

> tion retrieval, as well as an orientation on the part of the student to use the intellectual skills at his disposal (pp. 4-5).

Although the problem of objective measurement of these competencies remains, it is now possible for students to use the MAP program to test out of general education requirements at the university.

The CUE Center—In July of 1974, a University Division of General Studies and Center for Competency-based Undergraduate Education (CUE) were authorized for the university. Activities that had been funded through the MAP program were included in the University Division and research was assigned to the CUE Center. The Center, funded with the aid of a FIPSE grant, is designed to identify core competencies and further the understanding and development of them. The Center is also expected to establish methods of defining general education competencies by securing input from the public and corporate sectors. In addition, the Center is expected to support the research of scholars who are not from Bowling Green University, but who work in general education knowledge fields, and to screen and disseminate the best literature on competency-based education (Woditsch and Giardina 1975, pp. 1-2).

The CUE Center has just begun its operation, but its activities suggest some of the different paths possible when one program in a large institution is pursued as a competency program. The first task set out by the Center was to win the support and understanding of the academic community. The faculty had to be convinced that there was "poverty of general education" and that competency programs might offer a remedy. In addition, it was important for more faculty members at BGSU to experiment with competency-based instruction. Many meetings were held with faculty committees and department chairmen just to build support.

As part of its research effort and in cooperation with the Division of General Studies, the CUE Center staff conducted an intensive on-site analysis of the university's summer orientation program. The evidence from the survey was that students are counseled to get general education requirements "out of the way" as soon as possible, thereby negating any overall university intention of stressing general education competencies. In another of several projects underway, the Center has established relationships with a management firm and an industrial corporation to ascertain the relationship between adult performance and competencies developed through general education (pp. 15-16).

Conclusions

A Problem in Research

As is often the case with attempts to describe new programs in higher education, there is no research literature to speak of on competency programs. The literature that is available consists of three or four diverse types that are not often drawn together. One type is the discussion of a theoretical concept, such as "mastery learning" or "achievement-based degrees," which provide institutions organizing competency programs with springboard ideas and rationales. The next category is the proposal either for an institutional program or for external funding. This category usually suffers from an excess of optimism and placement in the future tense. Closer to reality are a very few discussions of specific programs that relate the program to a concept, such as the integration of liberal arts and competencies at a specific institution. However, most program descriptions have to be garnered from catalogs and instructional brochures for potential and active students. Finally, there are a body of pronunciamentos about competency programs that represent the opinions of a small group of consultants, designers, and evaluators who have been actively engaged in promotion of competency programs. What is missing are attempts to explain how concepts are tied to practice and how practice might be classified and what the consequences of practice have been. This relates to one more aspect of the problem in research: most competency programs are only beginning; with few exceptions, the programs encountered are still working out their practice. In many cases, money has been granted, institutional approval secured, the program started, and a few competencies agreed upon. Thus, any valid description of competency programs that combines practice and theory may have to wait until these programs have experience and that experience subjected to external scrutiny.

Why Competency Programs?

A variety of reasons have been given by the promoters of competency programs for their adoption. In many cases trustees and legislatures have specified that new programs be developed that are more cost-effective, or more efficient, or simply more attractive to students. Frequently there is an element of survival behind efforts

to begin a program. Also, it is evident that numerous programs have been developed or moved from slow beginnings into an accelerated pace by the availability of grant money. However, there are considerations of a more idealistic kind that have given impetus to the development of these programs. Dissatisfaction with the slippery standards of normative evaluation or the threatened chaos of open admissions have been expressed as some reasons for beginning programs. In many cases, programs are begun because of the desire to move the rhetoric of the catalog about liberal arts and general education into practice. And many programs have sprung from the simple desire to have better, more cost-effective instruction for students.

Procedures in Implementation

From both the statements of experts and the concrete descriptions of program development based on committee drafts and evaluation reports, a blended series of ideal and real steps may be ascertained that are followed when an institution decides to implement a competency-based educational program. Usually, there is discussion of what the institution is trying to accomplish by offering a degree. In a variety of ways agreement is reached on what the institution is trying to accomplish. From that point, a series of competencies are found acceptable or at least stipulated for discussion and trial use. These competencies arise in some manner from a model of the ideal graduate. Major differences occur between the competencies proposed for liberal arts colleges graduates and for graduates of degree programs leading to specific professional roles. Criteria are specified for the achievement of competencies. Much variety is shown in the types of criteria in use and the extent to which the criteria are tied to demonstrable behaviors. In many cases the programs were in the process of developing these criteria. At this point, ideally, institutions go on to develop assessment and evaluation devices that permit the institution to measure the progress made by the student and also serve as "feedback" sources for student instructional services and learning experiences. Next, revisions are made in the instructional program. At a minimum, these include the requirement that traditional courses be labelled with the competencies they will help students achieve. The major, revolutionary change in approach that must be accepted is that the institution is providing learning experiences rather than exposure: if the student does not learn, does not move toward competence as a result of the experience, the instructional experience itself must be scrutinized.

Student learning outcomes are the sole evaluative criteria of an experience. This is a disavowal of the "blackbox" approach of traditional educational practice, which prescribes exposure of the student to varying experiences without assurance that the alleged changes in the student occur or can be attributed to the exposure. The concept of providing learning experiences that lead to competencies enables many institutions to move to a very broad concept of curriculum. Community and campus activities that provide learning for competency become part of the curriculum. Life experiences of adults that have promoted the development of competency can be utilized. The results of this approach are that institutions can move toward space-free and time-free instruction. Where or when a student learns is not important; what he learns and can demonstrate that he can do is important.

Major adjustments must be made throughout the institution if this type of revolution in practice is to occur. Faculty members in particular must adjust to a new role. They are employed as specifiers of competencies, facilitators of learning, assessors and evaluators of learning, counselors and advisors of students, and also providers of information. Students are also expected to perform differently than in traditional programs. They must understand more about the process they are undertaking and make more choices about what and how they will learn. They must demonstrate their learning in different ways, often to groups of outside evaluators rather than to a professor with whom they have had a course. Because of the new role for students, more attention must be given to their orientation, advising, and counseling. This means new emphasis on these programs in the institution.

In addition to faculty and students, many other components of the institution are affected. Assessment and evaluation programs may have to be developed and learning resource or skill development centers organized. The registrar and the accounting department must find out new ways to record student progress and to bill students for new and different forms of services. Grades may be abandoned, but transcripts and certification of achievement are required if the institution is to perform one of the underlying objectives of competency programs—the certification to society of student competence. Finally, the coordination and evaluation of the competency program itself must be done so that the program becomes operational rather than experimental or illusory.

Remaining Questions

On the basis of the program descriptions available to date on competency programs in higher education, many questions remain that perhaps cannot be answered until more experience is gained and more evaluative and descriptive studies performed.

Competency programs are inherently student-centered. They represent a solution to the academic-development/student-development schism that has characterized higher education. They also may offer an opportunity to combine academic education with the opportunity to become skilled and competent for a career *and* adult life. Because of their incremental nature and openness to a variety of learning experiences, they may encourage more students to stay in school. Yet, questions persist about what types of students can perform well in a competency program. Is this a variety of instruction that is responsive to the "new" students? Will there be any long-term developmental effects on the lives of students as a result of this type of learning experience?

Competency programs hold the promise of eventually being more cost effective. They have been advocated, for example, as a method of promoting the use of educational technology and numerous forms of instruction where the emphasis is on learner outcomes. But, hard questions will have to be answered about the long-term cost-effectiveness of competency-based instruction in view of the time and money required to begin one. Particularly for the small colleges the question is whether they will be able to sustain the costs or even determine them. One noteworthy aspect of this problem is that of changing faculty roles. An entirely new concept of what a faculty member is requires different bases of training, recruitment, time, and evaluation for faculty members. Some faculty members may not adjust, which means that, as one college put it, they will have to be "physically separated" from the institution. More important is the question, virtually unapproached in all the documents studied for this report, of whether faculty members can maintain a high level of scholarship while functioning in the manner required of them by competency programs.

Central to the implementation of competency programs in small liberal arts colleges is the notion that values and attitudes are part of the competencies that they want their graduates to demonstrate. This means that noncognitive, nonskill "behaviors" must be measured. By strict definition, this is an impossibility, and is tacitly acknowledged by the agreement that "competencies" mean an in-

crease in skills or behaviors. Can all the competencies represented by some of the broader statements be measured or assessed and thereby certified to society by the institution? At least in competency programs there is usually more honesty in admitting that some desirable quality may not be measurable.

Finally, the theoretical complexity of many competency programs raises the question of whether the structures might not topple from their own weight. This complexity is a result of the attempt to analyze what an institution is trying to do, to translate that purpose into broad goals, and make those goals operational in statements of competencies that can be measured. The result is a series of overlapping matrices, combining ways of looking at knowledge with developmental steps for human beings and values for human interaction. Much energy is required to move an institution within this type of framework. The proponents of competency programs in higher education, having decided that the benefits may be cost effective in the long run, pursue that task with great zeal.

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